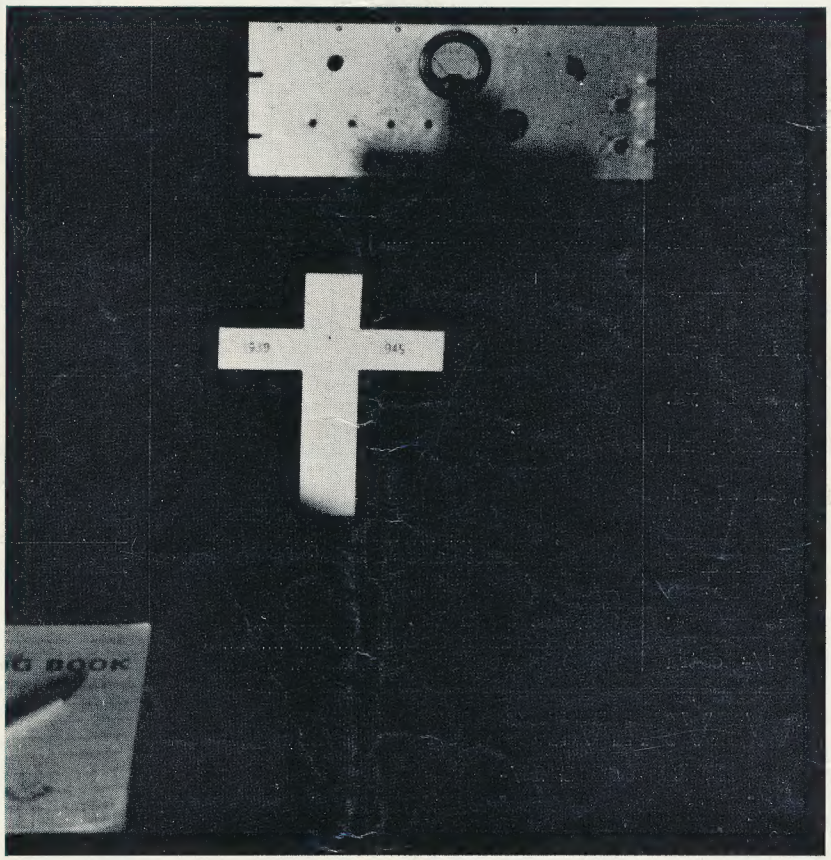
AMATEUR RADIO

AUGUST 1963



REMEMBRANCE DAY CONTEST – – 17th and 18th AUGUST

Vol. 31, No. 8

2/-

Registered at G.P.O., Melbourne, for transmission by post as a periodical

HAM RADIO SUPPLIERS

5A MELVILLE STREET, HAWTHORN, VICTORIA Phone 86-6465

We sell and recommend Leader Test Equipment, Pioneer Stereo Equipment and Speakers, Hitachi Radio Valves and Transistor Radios, Kew Brand Meters, A. & R. Transformers and Transistor Power Supplies, Ducon Condensers, Welwyn Resistors, etc.

North Balwyn tram passes corner. Money Orders and Postal Notes payable North Hawthorn P.O. 5/- Packing Charge.

SCOTCH BRAND RECORDING TAPE

Brand New, Bankrupt Stock

on 5¾" Reels

1275 feet, **42/-**; usual price 62/-.

850 feet, **30/-**; usual price 42/-.

SAKURA CIRCUIT TESTER

Sensitivity: d.c. 20,000 ohms/volt, a.c. 10,000 ohms/volt. Ranges—d.c. volts: 6, 30, 120, 600, 1,200v.; a.c. volts: 6, 30, 120, 600, 1,200v. D.c. current: 60 μA., 6 mA., 60 mA., 600 mA. Resistance: 10K, 100K, 1M, 10M ohms. Capacitance: 0.001-0.2 μF., 0.0001-0.1 μF. Inductance: 30-3,000H. Decibels: —20 to +17 db. (0 db.—0.775 volt—600 ohms). Dimensions: 4⅛" x 6¼" x 2⅜". Weight: 1.3 lbs.

Price £9/10/0 inc. tax.

CO-AXIAL CABLE

50 ohm, UR67, 3/8" diam., in 25 yd. Rolls **30/-**; or 1/6 yard.

52 ohm UR43, 3/16" diam., in 12 yd. Rolls **15/-**; or 1/6 yard.

71 ohm UR32, 3/16" diam., in 100 yard Rolls **£7/10/0.**

72 ohm UR70, 3/16" diam., in 27 yd. Rolls **30/-**; or 1/6 yard.

TRANSISTOR RADIO BATTERY

9volt, Type 216 (BL-006P). Well known make. **4/9 each.** Discount for quantity.

Log Books .... 5/6, postage 1/- extra

BARGAINS! BARGAINS!

Rienartz Coils, RC6 .... **12/6 each**
Sato Knobs, black & white, ¼" shaft, **1/6**
Plastic Valve Caps, suit 807, 866, **3/6 ea.**
Crystal Earphone, suit Trans. Radio, **6/6**
Circuits for CV1935 Transceivers, **10/-**
Dial Globes, Madza, **7/6** per box of 10.
Dial Globes, 40 mA. .... **1/- ea.**
Egg Insulators ceramic, 1½" & 1", **9d. ea.**
Three-core domestic Cable **2/3 a yard**
Hook-up Wire, 10/010, red, black and Green, **4d. yard**, or **200 yd. roll £3.**
Earphone Inserts No. 2, actuating diaphragm type, ideal as small spkr., **7/6**
Pye dble. bulkhead mtg. Coax Con., **2/6**
Pye Coax Connectors .... **4/- pair**
Crystal Sockets, DC11 .... **2/6 each**
Crystal Sockets, FT243 and min., **2/9 ea.**
SCR522 28-volt Genemotor power sup., ... **20/-**, 5/- packing
Low Impedance Headphones **12/6 pair**
Vibrators, Oak/M.S.P., 6 volt, synchronous, 7-pin, AV5211R **£1**
Octal Plug and Socket, American Ampenol, in metal screw case, **8/6 each**
Scope Soldering Irons, to clear .. **55/-**
Complete with transformers **£5**
Ceramic Variable Condensers, small, 5 to 60 pF., Eddystone **28/-**
Ceramic ¼" Shaft Couplings **3/6**
Vibrators, 4-pin 6 volt, non-synchronous, M437 .... **42/-**
Vibrators, 4-pin 12 volt, non-synchronous, M438 .... **42/-**
Valve Socket and Shield, 9-pin McMurdo **4/6**
Ceramic 7-pin Valve Sockets, **2/6 each**
Ceramic 9-pin Valve Sockets, **2/6 each**
EF50 Ceramic Socket **3/6**
EA50 Valve Sockets **1/6**

ENGLISH INDICATOR UNITS TYPE 1

Contains: one 6" c.r. tube VCRX263, three CV327/EF52, five CV858/ECC91/6J6, two CV140/EB91/6AL5, and one 6V6GT. Brand new condition. **£6/10/0.** 5/- delivery charge to railhead.

COMMAND TRANSMITTERS

Range: 7 to 9 Mc., less Crystal **£6**

POWER CHOKES

12 Henrys, 125 mA., 275 Ohms, **£2/8/0**
12 Henrys, 100 mA., 290 Ohms, **£1/12/0**

RECEIVERS

Type R-4/ARR2, 234 to 238 Mc/s., **£5**
BC733-D, with valves, ... **£4/10/0**

METERS

0-50 mA., 3¼" round, 2½" hole, brand new .... **30/-** ea.
MR2P 0-1 mA., 1½" square, **35/-** inc. tax
MR65 0-1 mA., 3" square, **47/6** inc. tax
MO65 0-1 mA., 3¼" round, **35/-** inc. tax

AMERICAN POTENTIOMETERS

American Bradley, 2" long, ¼" shaft, 1" diam. Available in following sizes: 10,000, 20,000, 25,000, 30,000, 50,000, 100,000, 250,000 ohms, and 2 megohms.

Price 2/6 each

High Impedance Headphones, suitable Crystal Sets **25/-**
Belling Lee Coax Plug & Socket, **7/6 pr.**
Midget Variable Condenser, RMG1, 10 to 415 pF. **25/-**

NEW VALVES AT BARGAIN PRICES

1A3	2/6	10 a £1	2X2	5/-	5 a £1	6G8G	26/-		7E6	3/6	7 a £1	6146	£3/10/-	EF72	5/- 5 a £1
1A5	5/-	5 a £1	3A4	10/-		6J6	10/-		7W7	2/6	10 a £1	6360	£2/10/-	EF73	5/- 5 a £1
1C7	3/-	7 a £1	3A5	10/-		6K7	5/-	5 a £1	12A6	4/-	6 a £1	717A	7/6 3 a £1	EF86	28/-
1D5GT	5/-	5 a £1	3S4	10/-		6K8GT	12/6		12AH7	5/-	5 a £1	807	7/6 3 a £1	EL41	10/-
1D8	7/6	3 a £1	5U4GB	14/6		6L7	5/-	5 a £1	12AT7	15/-		808	10/-	EY91	5/-
1F5	10/-		5Y3GT	13/9		6SA7	7/6		12AU7	15/-		815	15/-	KT61 (6V6)	15/-
1H4	5/-	5 a £1	6AG7	12/6		6SC7	7/6		12C8	5/-		830B	15/-	QQE04/20	£3½
1H5	5/-	5 a £1	6AJ5	7/6	3 a £1	6SF5	7/6	3 a £1	12H6	3/6		832A	19/6	QQV06/40	97/6
1H6	5/-	5 a £1	6AL5	14/-		6SH7	4/-	5 a £1	12J5	5/-	5 a £1	866	32/6	RL18	7/6 3 a £1
1K4	5/-	5 a £1	6AM6 (EF91)	10/-		6SJ7	12/6		12SA7GT	10/-		954	5/- 5 a £1	UL41	7/6 3 a £1
1K5	5/-	5 a £1	6B8 metal	17/6		6SN7	12/6		12SC7	5/-	5 a £1	955	5/- 5 a £1	VR53	5/- 5 a £1
1K7	5/-	5 a £1	6BE6	15/-		6SQ7GT	22/-		12SK7	5/-	5 a £1	956	5/- 5 a £1	VR101	5/- 5 a £1
1LN5	(CV781)		6BQ5	17/-		6SS7	7/6	3 a £1	12SQ7	5/-		958A	2/6 10 a £1	VR102	5/- 5 a £1
	5/-	5 a £1	6C4	5/-	5 a £1	6U8	17/-		12SR7	5/-	5 a £1	AV11	2/11	VR103	5/- 5 a £1
1P5	2/-	10 a £1	6C8	10/-		6V4	11/4		14A7	3/6	7 a £1	EA50	2/- 10 a £1	VR105	10/-
1Q5	5/-	5 a £1	6CH6	2/-		6V6GT	16/-		1625	5/-	5 a £1	EC91/6AQ4	10/-	VR136	2/- 12 a £1
1S2	18/-		6CM5	25/-		6X4	10/-		1626	5/-	5 a £1	ECC35	20/-	VR137	2/6
1S5	10/-		6F5	7/6		6X5	15/-		1629	5/-	5 a £1	ECH33	20/-	VT25	5/-
1T4	10/-		6F6	12/6		6Y6	5/-	5 a £1	2051	5/-		EF36	5/- 5 a £1	VT78	3/6
2A5	7/6		6F8	5/-		7A8	2/-	11 a £1	30	1/3		EF39	5/- 5 a £1	VT127	4/11 5 a £1
2A6	7/6		6G6G	7/6		7C5	5/-	5 a £1	35T	30/-		EF70	5/- 5 a £1	VT501	7/6 3 a £1
2D21	12/-					7C7	2/-	12 a £1	5763	28/-					

"AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

AUGUST 1963
Vol. 31, No. 8

Editor:
K. M. COCKING VK3ZFQ

Publications Committee:
G. W. Baty (Secretary) VK3AOM
A. W. Chandler (Circulation) VK3LC
S. T. Clark VK3ASC
R. S. Fisher VK3OM
R. W. Higginbotham VK3RN
E. C. Manifold VK3EM
K. E. Pincott VK3AFJ

Advertising Enquiries:
C/o. P.O. Box 36, East Melbourne, C.2, Vic.
OR
Mrs. BELLAIRS, Phone 41-3535. 478 Victoria Parade, East Melbourne, C.2, Victoria. Hours 10 a.m. to 3 p.m. only.

Publishers:
VICTORIAN DIVISION W.I.A.,
Reg. Office: 65a Franklin St., Melbourne, Vic.

Printers:
"RICHMOND CHRONICLE," Phone 42-2419. Shakespeare Street, Richmond, E.1, Vic.

★

All matters pertaining to "A.R.," other than subscriptions, should be addressed to:

THE EDITOR,
"AMATEUR RADIO,"
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.

Acknowledgments will be sent following the Committee meeting on the second Monday of each month. All Sub-Editors should forward their articles to reach "A.R." before the 8th of each month. Any item received after the Committee meeting will be held over until the next month. Publication of any item is dependent upon space availability, but in general about two months may elapse before a technical article is published after consideration by the Publications Committee.

★

Members of the W.I.A. should refer all enquiries regarding delivery of "A.R." direct to their Divisional Secretary and not to "A.R." direct. Non members of the W.I.A. should write to the Victorian Division, C/o P.O. Box 36, East Melbourne. Two months' notice is required before a change of mailing address can be effected. Readers should note that any change in the address of their transmitting station must, by P.M.G. regulation, be notified to the P.M.G. in the State of residence, in addition "A.R." should also be notified. A convenient form is provided in the "Call Book".

★

Direct subscription rate is 24/- a year, post paid, in advance. Issued monthly on the first of the month, January edition excepted.

FEDERAL COMMENT

★

REMEMBRANCE DAY CONTEST

Once again our most popular Australian Contest is with us and serious contestants are preparing their gear to better their scores of last year. The changes to the Contest are few—however, two alterations agreed at Perth in 1962 have been made by way of amendment to the Rules published last month. The details of these changes are shown elsewhere in this issue.

The two amendments allow any Australian Amateur to obtain a certificate if he be a member of the W.I.A. or not. The other is the inclusion of the A.C.T. as a separate call area for certificate purposes, although, until formed as a Division, the A.C.T. may not win the perpetual State Trophy. Negotiations are also in hand to invite Sir Rohan Delacombe, the new Governor of Victoria, to deliver the opening address prior to the commencement of the Contest.

This year's Contest, like its predecessors, therefore promises to be a "bumper" one. We hope every entrant to the Contest will listen to the opening address, at that time give a little thought to the reason for the Contest, and carry the spirit and intent into the Contest itself—adopt good operating procedures, be unselfish, help your State to win by submitting your log, and most of all, enjoy yourself. Good luck.

NEW COMPONENTS

Every Amateur is interested in new components arriving on the market, or materials which will help improve or simplify his station equipment. One generally "window shops" at the popular radio houses for such items, but how many Amateurs look in other places, such as electrical stores, for new ideas?

We recently saw a new line of high impact plastic conduit and fittings, in a wide range of sizes, which appear to have great promise for Amateur work as well as in their intended use. These components are welded quite readily and easily, and impressed us with their light weight and strength. They would appear to be, size for size, more than competitive with their aluminium counterparts in price and weight.

An immediate idea which came to mind was the use of the conduit for beam elements. With a suitable metallic internal spray coating and the simplicity of welding and working, a very light beam could be built to last for many years and be completely waterproof into the bargain. Junction boxes and other fittings would no doubt have many other uses in the Amateur field.

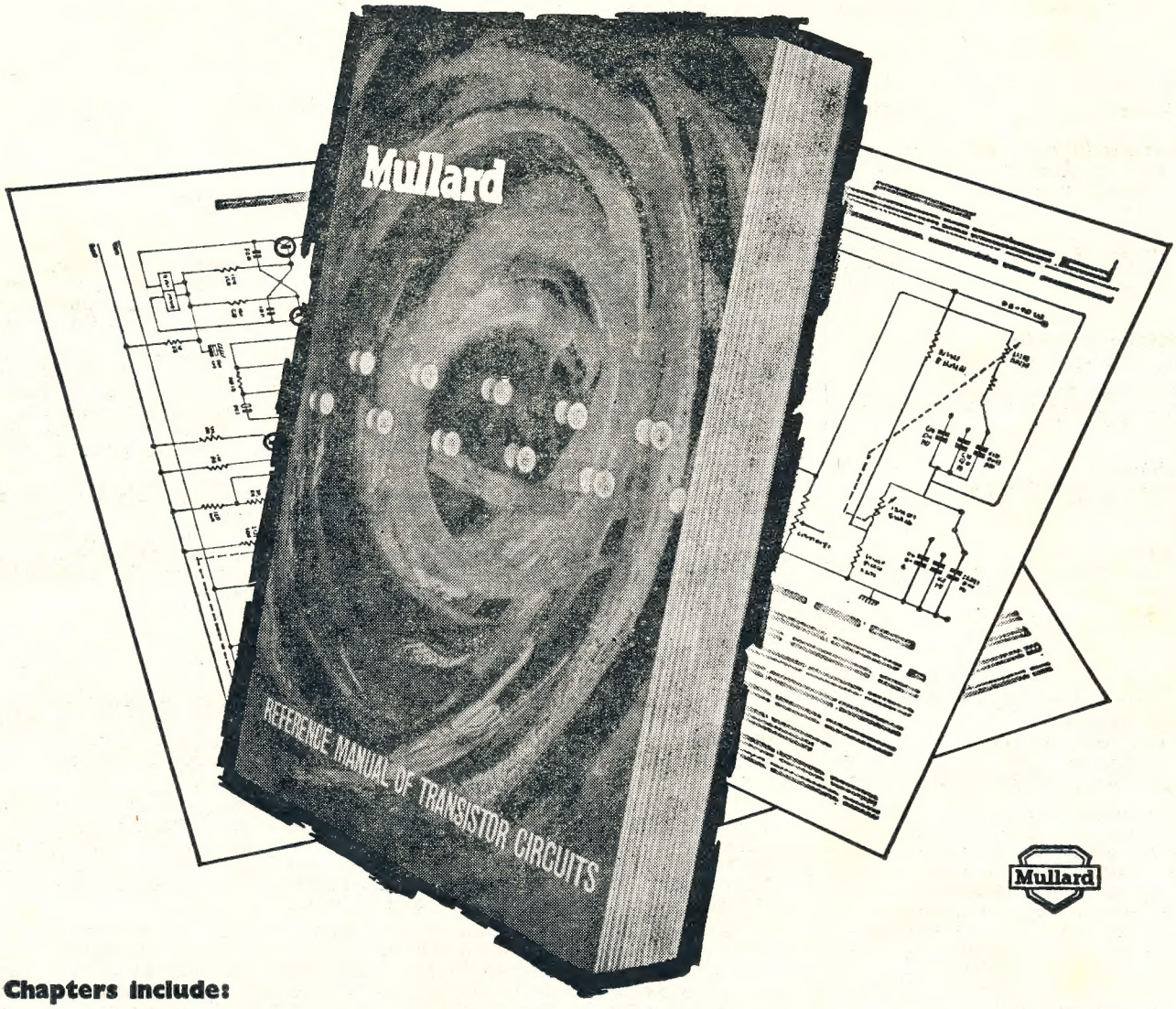
The average Amateur is an ingenious chappie and with some improvisation we forsee these materials being widely used in the near future. Maybe you have already seen and tried some of these items—if so, why not tell your fellow Amateurs about it—use this journal to disseminate your applications by writing an article which will be gratefully accepted.

FEDERAL EXECUTIVE, W.I.A.

CONTENTS

High Frequency Filter Type S.s.b. Transmitter 3
A Portable Battery Charger 7
Modifying the AR7 for S.s.b. 8
An Improved T-Notch Filter 12
A Crystal Controlled Converter for 576 Mc. 13
Hints and Kinks: Printed Circuits Component Removal 16
Amendments to R.D. Contest Rules 16
VK-ZL Oceania DX Contest, 1963 15
VK5JE Obtains D.X.C.C. on 7 Mc. 17
Historical Gleanings—1914 17
The Call of the Untamed 12
Federal and Divisional Monthly News Reports 23
Correspondence 17
DX 18
SWL 21
VHF 19
Youth Radio Clubs 21

Mullard REFERENCE MANUAL OF TRANSISTOR CIRCUITS



Chapters include:

- **The Junction Transistor**
- **New Techniques**
- **Characteristics**
- **Basic Circuits**
- **Semiconductor Diodes**
- **Practical Circuit Designs**

This manual of transistor circuits has been prepared by Mullard engineers as an up to date and readable volume which will be of use and interest to technicians, service engineers, junior designers and students of electronics.

It has a page size of 8½" x 5½" and describes more than 60 circuits — over 30 of which are being made available for the first time — including both domestic and industrial applications.

Mullard-Australia Pty. Ltd., Box 2118, G.P.O., Sydney

Please send me.....copies of "Reference Manual of Transistor Circuits" for which I enclose..... remittance, being 15/– per copy plus 1/5 postage.

Name .....

Address .....

..... **State**.....

MULLARD-AUSTRALIA PTY. LTD., 35-43 CLARENCE ST., SYDNEY, BX 2006 AND 123-129 VICTORIA PARADE, COLLINGWOOD, N,5. VIC. 41 6644

Associated with MULLARD LIMITED, LONDON

MT110

High Frequency Filter Type S.S.B. Transmitter

ARIE BLES. VK2AVA*

THE unit to be described is a 150 to 200 watt peak input s.s.b. transmitter, in principle capable of operation on any of the Amateur bands from 15 to 160 metres. It has been built in one version as a three-band 80-40-20 metres bandswitching unit, not larger than 9 by 12 inches chassis size.

The basic circuit diagram is presented herewith and possible modifications will be indicated. The presentation is not meant to be copied literally, but rather as an example of what can be assembled of locally available components, with as heart of the set a high frequency crystal filter composed of surplus type FT243 crystals at approximately 5,500 Kc. frequency.

PRINCIPLE OF OPERATION

Fig. 1 shows in simplified form the layout used. In a balanced modulator V2, r.f. carrier energy from the carrier oscillator V1 is modulated by audio frequencies from V3. The carrier is suppressed to a large degree and the residual carrier with two sidebands are fed through a four-crystal hybrid filter. Only one sideband will be passed, which is amplified in a stage of straight amplification in V4, and mixed in the following mixer/frequency converter stage V5 with fixed frequencies, derived from a third overtone crystal oscillator. The results are s.s.b. on still fixed frequencies, approximately 5,000 Kc. or so higher in frequencies than the desired Amateur bands.

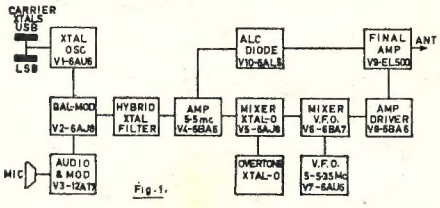


Fig. 1.

TRANSMITTER - BLOCK DIAGRAM.

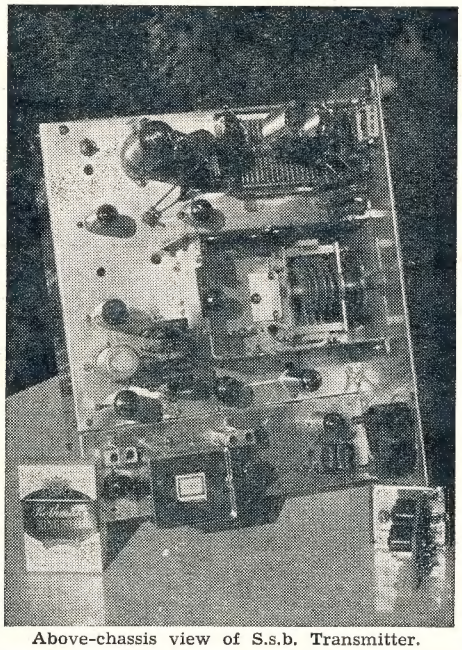
Balanced modulator, filter and mixing frequency layouts have been described in earlier issues of "A.R." (Sept '62, Feb. '63, and April '63, respectively). The advantage of this system, first used by Hallicrafters, is reasonable freedom from images and other undesired mixing products, and the need of only one common v.f.o. frequency range to cover all Amateur bands, provided the intermediate mixing frequencies have been properly chosen (see Table 1).

The next step is to mix these intermediate frequency s.s.b. signals with v.f.o. voltage from V7 in the mixer V6, amplify the proper output in the corresponding Amateur band through V8 to drive the class AB1 final V9, the output of which is coupled to the antenna. A small voltage from that output is rectified in diode V10 and fed back to V4 to provide a.l.c. (automatic level control), just as a.v.c. is achieved in a receiver.

* 33 Plateau Road, Springwood, N.S.W.

SUGGESTED MODIFICATIONS

There are modifications possible, some of which are schematically indicated in Fig. 2. Those that prefer the ultimate, at a price, in balanced modulators, the 7360 tube, could combine the crystal oscillator in the same envelope as the balanced modulator and also include a triode cathode follower stage to properly match the fairly low impedance of the crystal filter (see Fig. 2a). Another and even better method of frequency conversion to the Amateur bands is suggested in Fig. 2b. Instead of mixing the s.s.b. signal twice, the v.f.o. energy only is mixed with the overtone crystal frequencies and the output of that mixing combined with the basic s.s.b. signal. This may reduce possible mixing distortion, inherent with all mixing.



Above-chassis view of S.s.b. Transmitter.

Finally, as shown in Fig. 2c, and being the system successfully used by the makers of the Swan Transceivers, the intermediate mixing stage V5 can be eliminated entirely provided a stable v.f.o. can be built with enough second and third harmonic output on 9 and 12 Mc. to mix directly with the original s.s.b. signal on 5.5 Mc. This certainly is not easy, but can be done, as amply proved by Swan.

The physical layout of the transmitter is shown in Fig. 3. A bandswitch and plugs for power and control wires are located at the right hand side of the chassis.

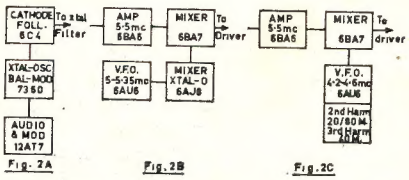


Fig. 2A Fig. 2B Fig. 2C

ALTERNATIVE - BLOCK DIAGRAMS.

Fig. 4 shows the complete basic circuit diagram of the block diagram of Fig. 1. The bandswitching has been omitted to simplify the circuit. It is obvious what circuits have to be switched to go from one band to another. It is strongly recommended to use plug-in coils if one cannot get the right five-gang ceramic switch assembly. Also the construction may be a bit involved for those who have only limited construction experience. There is ample space even in the small 9" x 12" layout to position plug-in coils between the tubes, close to the proper position in the circuit.

CARRIER OSCILLATOR

The simple Pierce type crystal oscillator is used, identical to the Collins b.f.o. circuit. Only 1 volt of carrier r.f. is required into the balanced modulator so the input to the oscillator is extremely small with the low screen voltage. For test purposes the other sideband carrier crystal can be switched in.

The carrier oscillator compartment should be shielded from the rest of the sideband generator sub-unit in order to prevent carrier leakage into corners where it is unwelcome.

BALANCED MODULATOR

This circuit is the PA0LZ single-ended pentagrid balanced modulator, not very well known outside Holland. The operating principle is simple, the cathode resistors, unbypassed for r.f. or a.f., cause a negative feedback, reducing the amplification of the carrier

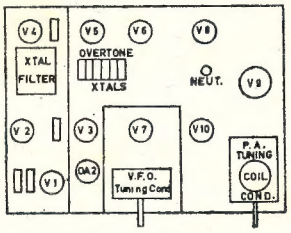
Overtone Osc. Frequency	S.S.B. Signal Frequency	Intermediate S.S.B. Freq.	V.F.O. Range	Output Range
13850	5500 U.S.B.	19350 U.S.B.	5350-5000	14000-14350 U.S.B.
14850	Same	20350 U.S.B.	6350-6000	Same
17850	5500 U.S.B.	12350 L.B.S.	5350-5200	7000-7150 L.S.B.
18850	Same	13350 L.S.B.	6350-6200	Same
14350	5500 U.S.B.	8850 L.S.B.	5350-5150	3500-3700 L.S.B.
15350	Same	9850 L.S.B.	6350-6150	Same

Table 1.

voltage injected in grid No. 1, but at the same time creating an effective voltage on grids 2 and 3 (kept at zero r.f. potential) in opposite phase to the voltage on grid No. 1. At the proper setting of the cathode potentiometer, the resultant effects in the plate circuit will oppose each other, causing carrier balance.

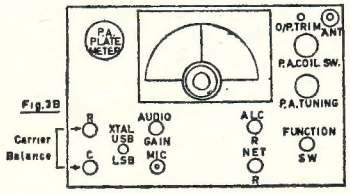
The capacity from grid No. 1 to cathode and the trimmer from cathode to ground form a capacity bridge for proper carrier phase balance, done after adjusting the cathode potentiometer first for minimum carrier. To some extent the two adjustments interact.

Fig.3A



CHASSIS LAYOUT.

Fig.3B



FRONT PANEL LAYOUT

The extra triode in the 6AJ8 is left unused. Other pentagrid mixers will work almost as well, except that the circuit constants may have to be modified for maximum carrier balance. The circuit is sensitive to overdriving, no more than 1 volt carrier should appear on grid No. 1 and likewise 1 volt of a.f. on grid No. 3 will produce plenty of sidebands. If the carrier cannot properly be balanced, there is bound to be leakage around the balanced modulator or overdrive on grid No. 1.

Incidentally, the same circuit is very effective as a receiver product detector, reducing the need for a low-pass filter in the detector output.

More than 1 volt of sidebands can be expected in T1. A single tuned circuit is not recommended here as the low impedance of the crystal filter will load the balanced modulator too heavily. Naturally it also loads the secondary of T1; the tuning here is fairly broad, but tolerable. An impedance match with a triode cathode follower is a good thing to add.

CRYSTAL FILTER

Enough has already been published and discussed over the air on this feature. Tuning the filter is very simple, little more is necessary than adjusting L1, L2 and L3 for maximum output on the centre frequency of the filter. A stable frequency meter is extremely useful to align the filter, but apart from that, no more than a good general coverage receiver with a reliable S meter is needed to align all other parts of the transmitter. Of course you are supposed to possess a grid dip oscillator and a reliable volt-ohm meter.

The crystal filter has some insertion loss and it is the right thing to amplify its output. At the same time, a.l.c. voltage can be applied to this amplifier stage. It is very simple to rectify a little voltage from the transmitter output stage and feed it back to an earlier stage, preferably operating on a different frequency than the output stage, in the same manner as a.v.c. is applied in a receiver.

Newcomers to s.s.b. could hardly do better than forget most of what they have learned in their a.m. time and start thinking in terms of receiver requirements. The a.l.c. action is very effective, reducing splatter interference due to overdriving the final amplifier and actually raises the average speech level. More s.s.b. rigs should be using a.l.c., including some commercial productions.

FREQUENCY CONVERSION

The system followed to convert the 5,500 Kc. fixed frequency s.s.b. signal to the desired Amateur band has been discussed above with the block diagram. The 6AJ8 used for V5 happened to include an extra triode for the crystal oscillator. The circuit for the third overtone crystal oscillator has not been used much elsewhere, but is very easy to adjust with the slug in the feedback winding L6.

Active overtone crystals will oscillate without this slug when L5 is resonated to the overtone frequency. Somewhat less active crystals can be given the correct amount of feedback with negligible effect on the tuning of L5.

The output circuit of V5 is resonated on the frequencies listed in the block diagram discussion. Mixing these intermediate frequencies with the v.f.o. output in mixer V6 produces the desired s.s.b. signal in the Amateur bands.

The v.f.o. is my favourite Clapp oscillator type, others may use their preferred Franklin or other Colpitts versions, provided they are stable oscillators. The secret here lies in the use of good components and rigid tension or friction-free mounting of the

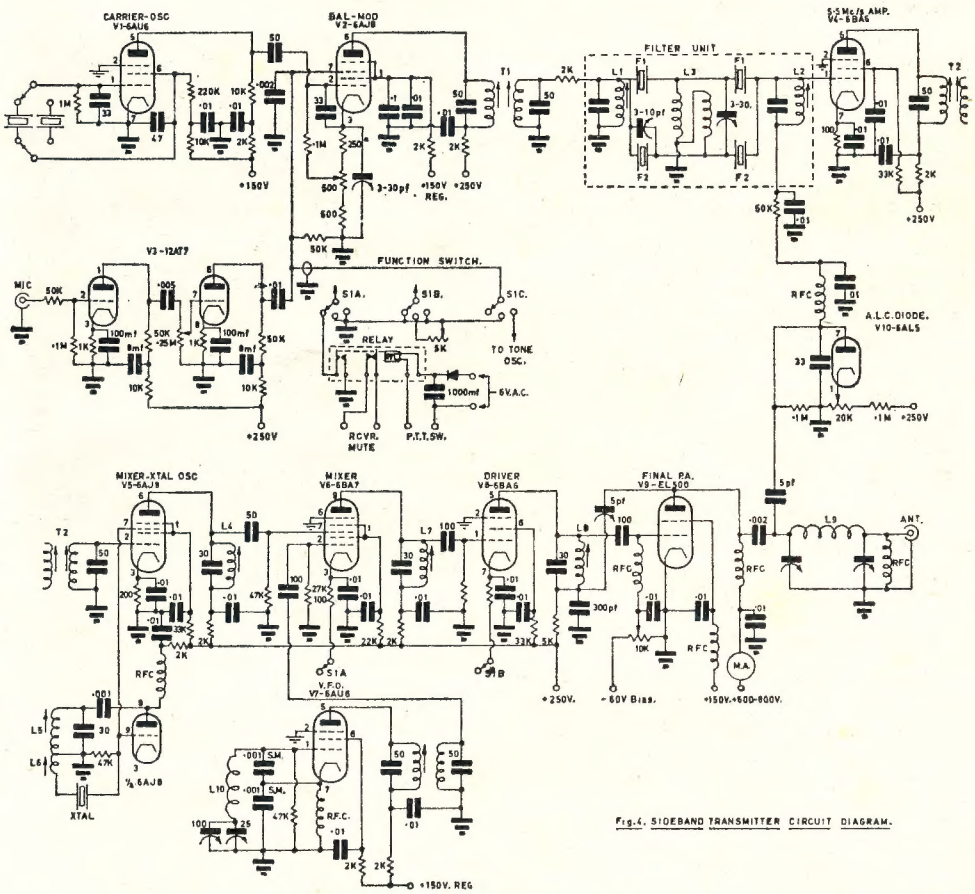


Fig.4. SIDEBAND TRANSMITTER CIRCUIT DIAGRAM.

T1, T2—TV 5.5 Mc. sound channel i.f. transformers or similar units.

L1, L2—Any slug-tuned coil, resonating on 5.5 Mc. with 50 to 100 pF.

L3—Toroid bi-filar wound coil, 20 to 23 turns (40-46 total) on 3/8 inch ferrite nut from walkie-talkie coils, the end of one winding connected to the start of the other for centre tap.

L4—Resonating on approx. 19, 12 and 9 Mc. for respectively 20, 40 and 20 metre operation.

L5—Resonating on crystal overtone frequencies.

L6—One-third of turns of L5, with small slug to adjust the amount of feedback inductance.

L7, L8—Resonating on 20, 40 and 80 metres respectively.

L9—3 inch length of B. & W. type 3015 or Willis type 4-16 coil, 48 turns 1 inch diam. for 80 metres, tapped at 15 turns for 40 metres and 5 turns for 20 metres.

L10—V.f.o. coil, 30 turns, same coil material as L9.

L11—Bandpass transformer for 5,000 to 5,350 Kc.

S1—Function switch, 3 position, 3 gang.
Position 1—P.T.T. (push to talk).
Position 2—V.F.O. netting.
Position 3—Test tuning with external audio tone source.

F1—FT243 crystals, approx. 5,500 Kc.

F2—Same, 1,800 to 2,000 cycles higher in frequency than F1.

RFC—Radio frequency chokes, all approx. 0.5 millihenry, small types, except in the plate of V9 which must be a solid transmitter type.

components. There is no need to use a Command set as oscillator, you can do a better job by building your own Clapp.

A bandpass filter in the output of the v.f.o. will secure strict v.f.o. fundamental output and little else, like harmonics. What can happen there is shown in Table 2.

Some overtone crystal frequency voltage will always be present in the output stage of V5 and it is wise not to let it beat with an unwanted v.f.o. harmonic and produce an unwanted signal within or close to the Amateur band. Changing the v.f.o. range to 6,000 to 6,350 Kc. will reduce this trouble greatly.

DRIVE AND FINAL

We now can expect a s.s.b. signal of 1 volt or more peak value on the desired Amateur band as output from V6 and this needs to be amplified to "drive" the final stage to full output. Almost everywhere one sees tubes like 6CL6, 12BY7, etc., applied as drivers and far too many home constructors have had difficulties with instability of their driver stages. All these tubes should be properly neutralised because they are never meant to be used as straight r.f. amplifiers and lack the proper internal screening between control grid and plate. But a small receiver-type r.f. amplifier tube like the 6BA6 will do the "driver" job just as well, is perfectly screened, and does not need more care than normal bypassing and separation of input and output circuits. In stage V8 with 2.5 watts input to the 6BA6, the output tube could be driven into grid current on peaks.

The final amplifier used is the Philips/Mullard equivalent of the now famous 6DQ5. The amount of fixed grid bias required will depend on the value of the screengrid voltage applied, which should be kept below 200 volts. A standing plate current of 25 mA. is safe for the final without grid drive. Properly loaded, it can be driven up to 200 mA. plate current with steady tone input, but have mercy on the little tubes and don't overdo that treatment. The output under those conditions is enough to light a 60 watt bulb to more than full brilliancy.

The output circuit is the common pi-coupler and the stage is properly neutralised. Some commercials are already recommending an indicator for correct neutralisation; adjust the neutralising condenser until maximum output coincides with the dip in the plate current.

Finally, the a.l.c. diode should be added. The 10K potentiometer in its cathode adjusts the threshhold of a.l.c. operation and its effect will be very noticeable.

NETTING

A final word on the netting arrangements. To a listener to a s.s.b. roundtable there is nothing more annoying than to have to re-tune from one station to another when they are not all on the same frequency. Transceiver users should not have any trouble to be on the same frequency provided they use their receivers properly. Personally I feel that others should check their netting more frequently, which some may be reluctant to do because of the difficulties they have in doing so. Either their transmitter signal blocks their receiver or is too weak to determine correct zero-beat with stronger stations. Also, some badly operating balanced modulators can produce extra beat notes and make guesswork of which to use. In this set the variable resistor in the cathode of the "driver", with the function switch in the netting position, will allow adjustment of the strength of the beat note in one's own receiver to the desired level.

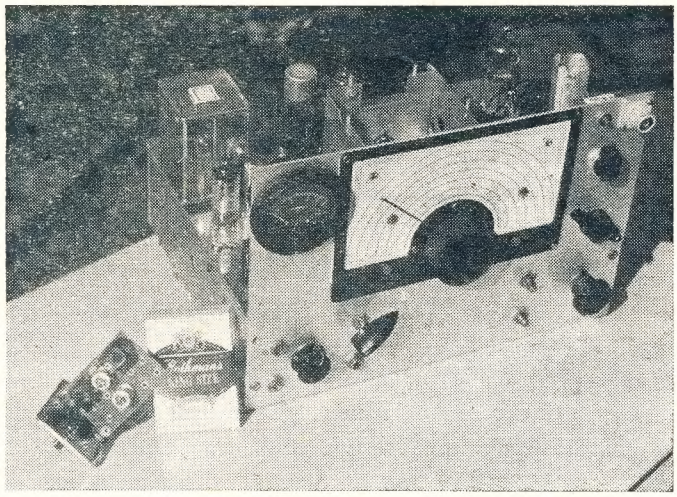
CONCLUSION

The performance of the prototype of this design has recently been heard by a fair number of stations on 40 metres and comparison with a signal from a Collins KWM-2 has been favourable. The unwanted sideband suppression can be better than 40 db. with proper adjustment of the crystal filter, and the a.l.c. feature helps to keep distortion products down. ●

Operation	V.F.O. Frequency	Second Harmonic	Overtone Crystal Freq. Leaking through to grid of V6	Unwanted Output as Difference of These Two Freq.
80 Metres	5350	10700	14350	3650
40 Metres	5350	10700	17850	7150

Table 2.

★



Lay-out of front panel of the S.s.b. Transmitter.

★

CHOOSE THE BEST—IT COSTS NO MORE

RESIN CORE SOLDERS
for reliable connections

O. T. LEMPRIERE & CO. LIMITED. Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth

S.S.B. CRYSTALS

Set of Five Gold-Plated Matched Crystals

Mounted in HC6U Holders
Suitable for 455 Kc. I.F's.

Price £16-10-0 per Set
+ 12½% Sales Tax

Full details on request.

BRIGHT STAR RADIO
46 Eastgate St., Oakleigh,
S.E.12, Vic. Phone 57-6387

● *HERE IT IS! JUST OUT*

"CQ's ANTENNA ROUNDUP"

160 pages of sheer enjoyment. Forty-seven information-packed articles. The cream of Antenna information.

Price 35/6, plus 1/6 postage

● *FOR THE NEWCOMER!*

"UNDERSTANDING AMATEUR RADIO"

A brand new addition to the A.R.R.L. family of publications for the Radio Amateur. The 320 pages of this helpful new publication contains a great amount of "down to earth" information. A "must" for Ham operators.

Price 28/-, plus 1/6 postage

● *EVERYBODY'S FAVOURITE!*

"THE RADIO AMATEUR'S HANDBOOK"

1963 Edition

The standard manual of Amateur Radio Communication.

Price 51/6, plus 2/6 postage

● *THIS IS GOOD!*

"AMATEUR RADIO ANTENNA HANDBOOK"

by HARRY HOOTEN

A complete coverage of Ham Antenna Systems including theory and practical design application, transmission lines, impedance matching, coupling, "home-brew" arrays, and towers. Send your order now.

Price 31/3, plus 1/9 postage

McGILL'S AUTHORISED NEWSAGENCY

Established 1860. **183-185 ELIZABETH STREET, MELBOURNE, C.1, VIC.**

"The Post Office is opposite" **Phones: 60-1475-6-7**

UNIVERSAL SOUND

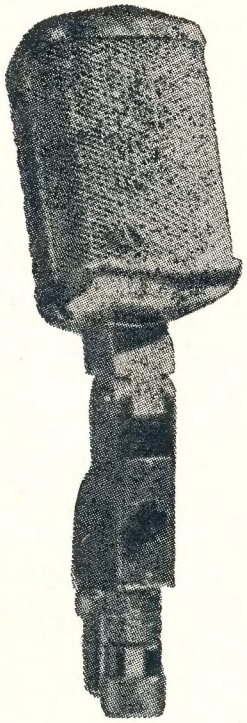
A Product of Italy

DYNAMIC CARDIOID MICROPHONE

Model 601

Model 601 is a Dynamic Unidirectional (Cardioid) Microphone for studios, music and public address, strongly built and famous for quality.

Free of amplitude, phase and harmonic distortions. High and low impedance. It offers an additional discrimination factor with a difference of 18 db. from front to back.



Output: —54 db. (1 volt p/microbar).
Response: 50-12,000 c.p.s. unidirectional.
Impedance: 25,000 ohms, easily stepped down to 250 ohms.
High or low impedance selection.
Dimensions overall: 60 x 60 x 155 mm.
(2-3/8" x 2-3/8" x 6-1/8").
Low frequency change switch for use when speaking.

On-off switch on handle.
Detachable connector.

Retail Price: £25/14/0
Plus Sales Tax £2/9/0

Marketed by **ZEPHYR PRODUCTS PTY. LTD.**

58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA **Phones: 25-1300, 25-4556**

A PORTABLE BATTERY CHARGER

*DAVID BILLS-THOMPSON**

GENERAL interest and activity in civil emergency services prompted the development of an inexpensive battery charger. Low cost was of primary importance and the search for components began among discarded electrical equipment at home. As the performance of the unit which was evolved proved to be very satisfactory, it was decided to make available those details which could be of use to people interested in W.I.C.E.N. and similar fields.

EQUIPMENT

An AT5 genemotor, which is rated at 26 volts input and 550 volts at 350 mA. output, was used with a 30 c.c. two-stroke engine.

COUPLING

By removing the fan from the genemotor, a small length of shaft was exposed. A bush was screwed to this, so that the unit could be direct coupled through a section of canvas rubber vacuum hose to a similar bush on the crankshaft. An output of 4 amps. at 12 volts was obtained with the first test. In this, the engine was operating at its maximum speed, which is not desirable for continuous use.

INCREASING THE OUTPUT

It was therefore necessary to increase the output of the generator for a given engine speed. This was achieved by connecting the two shunt fields in parallel. This increased the current through each coil and gave a higher flux density.

RECONNECTING THE FIELDS

To obtain this change in field connections, some of the binding tape was carefully removed to gain access to the internal connections of the thick series fields and the shunt fields. **N.B.** The shunt fields are of light gauge wire, and all physical disturbance of the winding must be kept to a minimum. Fig. 1 shows the original connection of the AT5 genemotor. The letters on the circuit indicate the ends of windings and their order shows the direction of current flow, i.e. the direction of current through the armature is from "C" to "D".

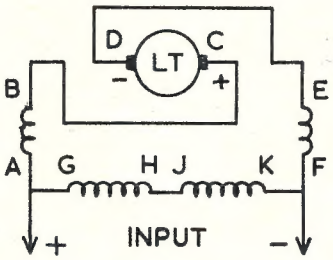


Fig. 1.

ELECTRIC STARTING

It should now be an easy matter to co-ordinate the series and shunt fields for an efficient start/generate circuit. A double pole double throw relay controlled by a push button was used in this unit. An ammeter and a cut-out were also included. The ammeter was wired so that it was not in circuit during starting. Fig. 2 shows the reconnection of the fields with the start relay, cut-out and ammeter. The letters identify the winding ends with those in Fig. 1.

REVERSING ROTATION

With the original internal connections, the armature rotation is anticlockwise viewed at the fan end. Fig. 2 is drawn for the normal rotation, but in some cases it will be necessary to reverse this direction. Electrically, this can be done by two methods, i.e. reversing the armature connections, or by reversing the field connections. To maintain the correct h.t. polarity (negative to earth), the **field** connections should be reversed with respect to the armature. This means that the pairs of field connections shown in Fig. 2 as AF, HG and KJ should be reversed. Another possibility is to rotate the field system through 180° (two-pole machines only), but this simpler method may not be suitable for other types of genemotors.

PERFORMANCE

As a cumulative compound motor with 12 volts input it can provide 3 lbs./ft. of torque for starting the engine. The maximum charging rate was 12 amps. Using only one-third throttle opening, the engine would run for about two hours on one pint of "petroil," with a charging rate of 6 amps.

H.T. END

The h.t. end was conserved for lighting purposes only. A 100 watt lamp

(Continued on Page 16)

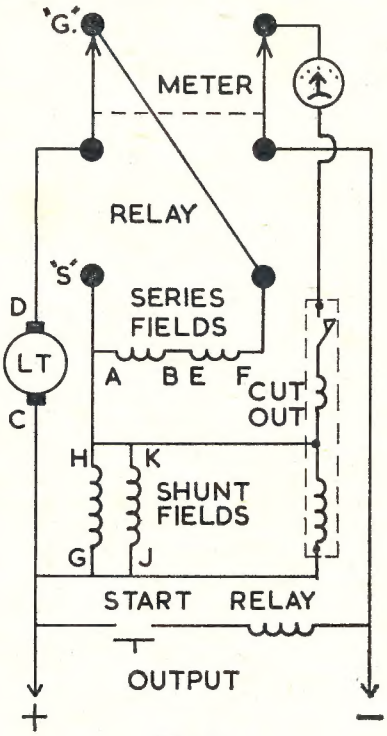
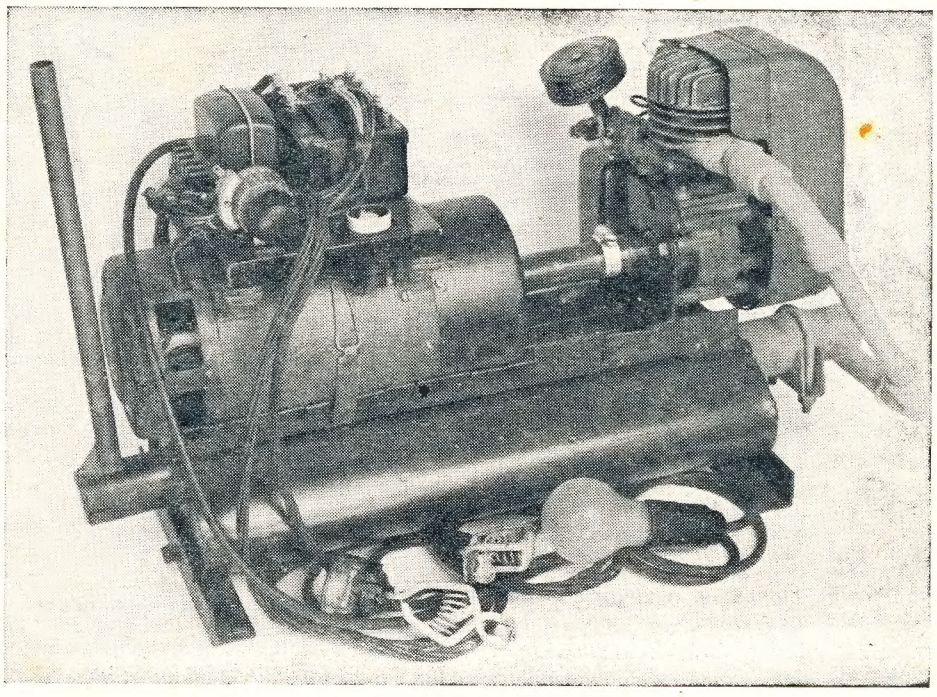


Fig. 2.



* 6a Fairmount Road, Hawthorn East, Vic.

Modifying the AR7 for S.S.B.

A. S. MATHER, VK2JZ*

THE modifications to be described will make the AR7 an almost ideal s.s.b. receiver and it will rival for Amateur-band operation the many excellent commercial receivers that are finding their way into Australian Amateur Stations, with the exception of the dial calibration. But even that could be remedied as will be discussed in the course of the article.

Although this article deals with the AR7, most of the modifications could be applied to any commercial receiver of a similar vintage.

It will be noted that it still leaves the AR7 with its normal coverage, as a communications receiver should it be desired; but for the Amateur bands, it should be used in conjunction with a crystal locked converter, so only 3.5 Mc. to 4 Mc. is tuned for optimum results.

Rather than attempt to show each modification separately, I thought it would serve the best purpose if the complete new circuit diagram was shown so it could be compared with the unmodified circuit and it will be obvious that there is very little left of the original.

The modifications will be dealt with under separate headings, any of which will improve the performance of the set either for a.m., c.w. or s.s.b.

TUBE COMPLEMENT

It is assumed that the filament wiring of the set has been altered to allow parallel operation of all filaments on 6.3v. a.c.

The 6U7Gs were replaced with EF39s and the 6K8G with an ECH33. The 6G8G second detector is removed and the socket is used for the 6SN7 audio a.g.c. tube. To this is added a 6BU8 product detector, a 150C1 voltage regulator, a 6BH6 100 Kc. marker oscillator, 6H6 noise limiter, and a 12AU7A a.g.c. rectifier and a.m. audio amplifier.

CAPACITORS

As there is a considerable amount of work to be done under the chassis, it is important that you remove all the original paper condensers and replace them with the newer, more efficient and smaller polyester types. The space gained will greatly facilitate the work of modifying the AR7, and although the originals may test satisfactorily, they have to be discarded. This applies to the 8 μF. and 25 μF. tubulars which can be replaced with advantage with the latest miniature types.

BANDSPREAD

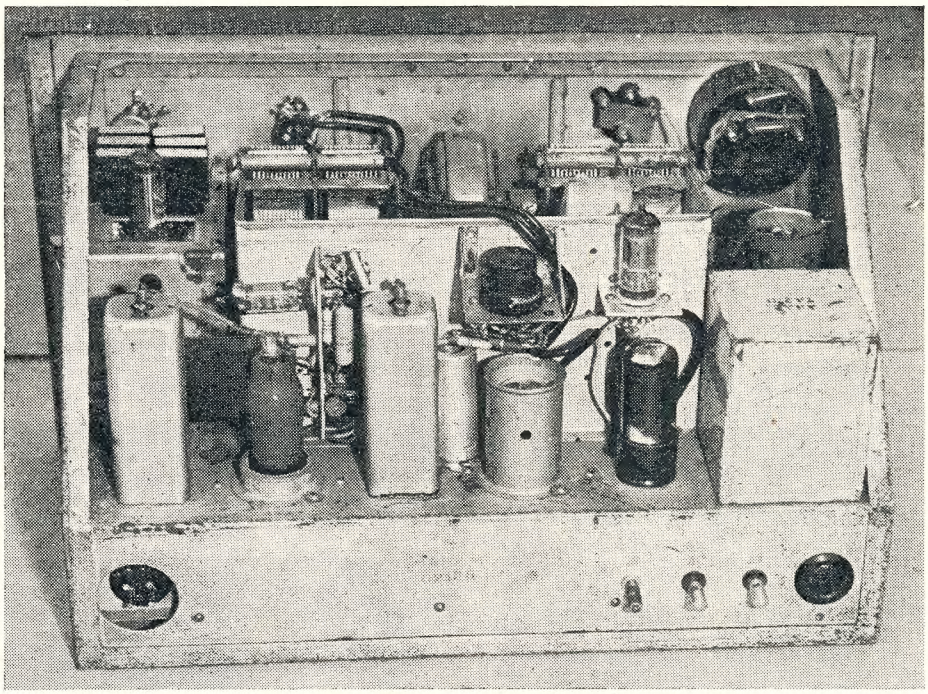
A slow tuning rate is most important for s.s.b. and a crystal locked converter is used to hetrodyne 28, 21, 14 and 7 Mc. to 3.5 Mc. A Band C coil box is modified to tune from 3.5 Mc. to 4 Mc. over the full range of the tuning dial. This takes care of 21, 14 and 7 Mc. and the first 500 Kc. of the 28 Mc. band. Rather than have less bandspread, I thought it better to settle for 3.5 Mc. to 4.0 Mc. tuning and use the original Band C coil box if necessary to tune all the 28 Mc. and 29 Mc. band if necessary.

AR7 coil boxes were very plentiful from disposals so a Band C box was modified by cannibalising another box for the series trimmers. The coils are not touched and only the trimmers were added in series with the coils and the original parallel trimmers and the 420 pF. ganged condensers as shown. It will be noted that no padder condensers are used in the oscillator section.

A 50 pF. trimmer was fitted to the hole formerly occupied by the tone control and wired across the aerial tuning gang to peak the antenna coil on weak signals.

We now have electrical bandspread which will greatly help in tuning s.s.b. This can be further improved by the addition of a manual vernier. Mine was designed and presented to me by John VK2AKB and used a ¼" diam. rubber wheel to engage when wanted the edge of the AR7 tuning dial and turned by a 1" metal knob.

The bandspread is, however, so good that I find that the extra vernier control is seldom used.



Rear view of Modified AR7. Xtal filter and V11 will be seen at top left. Components along rear of chassis are (left to right): IFT3, V5 (with shield removed), IFT4, V6, V8, V13 and output transformer. Mounted on brackets are V10 (above V5), V9 (above V6 and V8) and V7 (above V13).

The slug, series trimmer and parallel trimmer in the oscillator section are first adjusted to spread the oscillator tuning as evenly as possible between the 450 and 50 markings on the tuning dial.

Linear bandspread is not possible with this system and the best I could do was:

450	dial mark	—	3.5 Mc.
310	"	"	3.6 "
230	"	"	3.7 "
160	"	"	3.8 "
100	"	"	3.9 "
50	"	"	4.0 "

The 100 Kc. marker makes these adjustments easy and the 2nd r.f., 1st r.f. and aerial coil were then aligned to the new frequency coverage.

It is at this point that the reader's ingenuity could improve the performance of the AR7 as it was an intriguing thought that perhaps the dial could be made to count in the opposite direction. That is when the dial turned in an anti-clockwise direction which increases the frequency, the dial readings would also increase.

Therefore, if one was patient and with a more linear method of bandspread, each division could be made to equal 1 Kc. on the dial.

To read the frequency on any band (7 Mc. excepted in my case) the dial reading would be the band frequency plus the dial reading as the receiver tunes 3.5 Mc. to 4.0 Mc., 500 Kc.

* "Wolaroi," 14 William St., Singleton, N.S.W.

Then, of course, it would be possible to fit a modern type dial and calibrate each band directly on it. I would certainly like to hear from anyone who has progressed along these lines. So much for that.

CRYSTAL FILTER

We now come to the half lattice crystal filter. This subject has been covered many times in "A.R.," "QST," "CQ," etc., and will only be dealt with in a general way in this article.

I use a channel 46 (455.5 Kc.) and a channel 47 (457.407 Kc.) crystal in the series mode of a half lattice configuration between the mixer and the 1st i.f. valve.

Although channel 44, 45, 48 and 49 crystals are shown shunted across the output of IFT1, I found that they had very little effect on improving the bandpass characteristic of the filter, but I left them in.

It would, of course, only be necessary to use any two adjacent channel crystals that are within the tuning range of the IFT's and the mixer oscillator frequency adjusted accordingly. Now I will stick my neck out and say I don't know how anyone manages to adjust such a filter as this without a wobbulator and c.r.o. No doubt some sort of results are possible using a frequency meter and output meter, but this is tedious, time consuming and the results at best a compromise.

The small effort required to build up a simple wobbulator will repay you with a classic bandpass curve approx. 3 Kc. wide with the maximum dip between peaks and very steep sides, 60 db. down and no secondary lobes. With such a set up, you can immediately see where you are going and adjustment of IFT1, IFT2, IFT3 and IFT4 will quickly give you the required bandpass characteristic. This all sounds delightfully simple and it really is.

The original crystal holder and phasing condenser are removed and the 150C1 V/R and six FT241 sockets are installed on the metal cover above IFT1 and IFT2 as shown.

This filter will increase the i.f. gain so all leads must be kept as short as possible to avoid any instability, and shield the leads from IFT1 to the crystal sockets and from the crystal sockets to the grid of the first i.f. tube.

THE PRODUCT DETECTOR

The 6BU8 product detector is fitted between IFT4 and the 6SN7 a.g.c. socket (originally the 6G8G socket). The original circuit was first described in "CQ"[1] and later in "A.R."[2] When used as shown, the output is such that the first audio stage can be eliminated and the 6V6G can be driven directly from the transformer secondary, a step up of 1.3. The 6BU8 only requires about 3 volts r.f. drive, and as the b.f.o. injection voltage is normally taken from a tap near the cold end of the 6C8G b.f.o. coil, it is not sufficient. By removing the 0.05 μF. by-pass condenser at the plate of the 6C8G and feeding the control grid of the 6BU8 through a 0.001 μF. condenser from the 6C8G plate, approximately 4 volts of r.f. is obtainable.

[1] "A New Product Detector," "CQ," August 1959.
[2] Sideband Notes, "A.R.," April 1962.

Remove the connection from the a.g.c. line to the b.f.o. switch so when the b.f.o. is turned on, the a.g.c. line is not shorted to ground.

It is well to remember here that if you do not have sufficient b.f.o. injection voltage (the re-inserted carrier) then strong s.s.b. signals will cause overmodulation and the r.f. gain will have to be reduced with resultant loss of output to the audio stage.

The 6BU8 will, however, handle extremely strong signals before overload and easily out-performs all the other product detector tubes that I have tried.

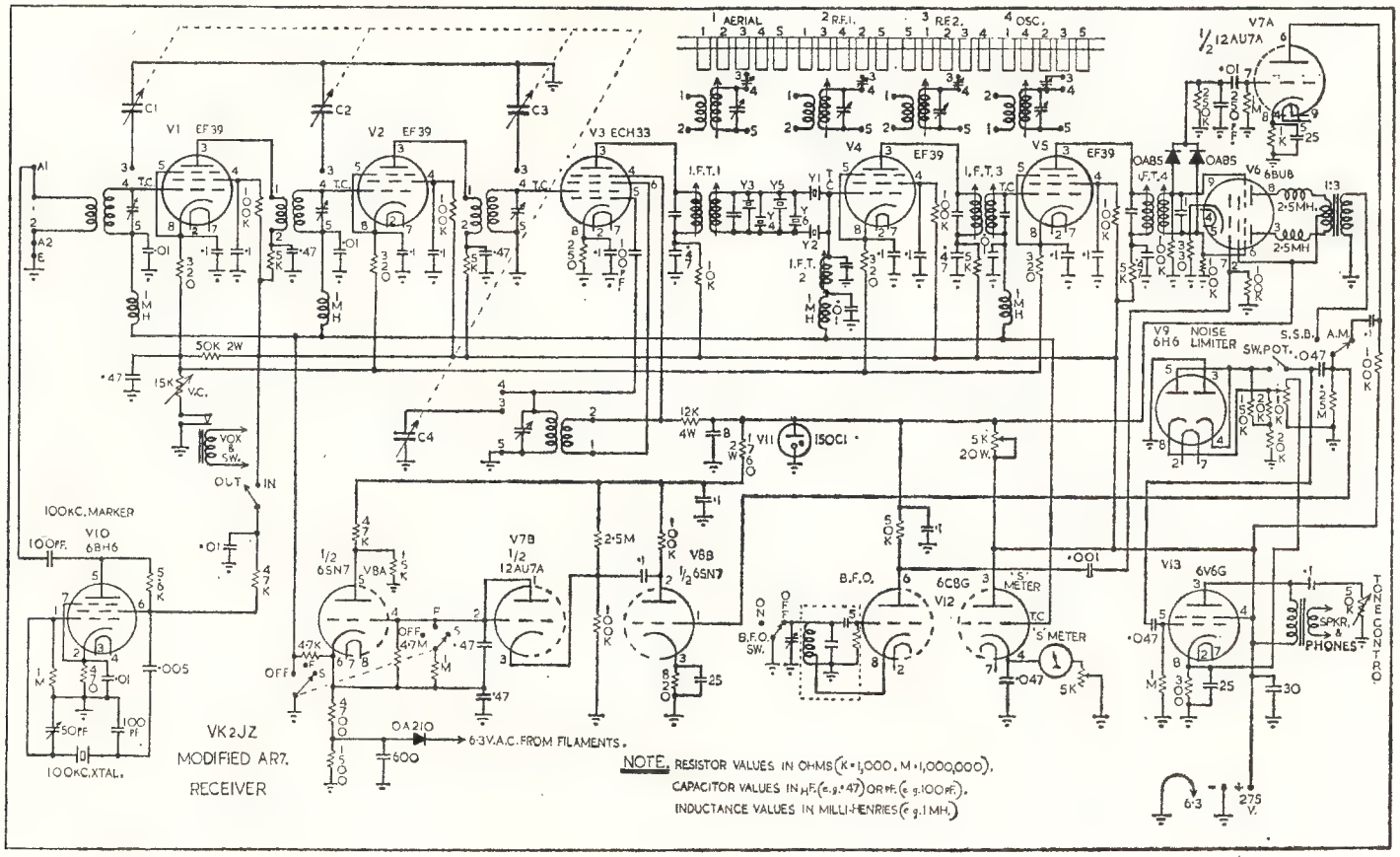
The output of the product detector is fed to one side of the s.p.d.t. rotary wafer switch fitted to the hole vacated by the phasing condenser.

The other side is connected to the output of the a.m. detector so this becomes the a.m.-s.s.b. switch.

A.M. DETECTOR AND AMPLIFIER

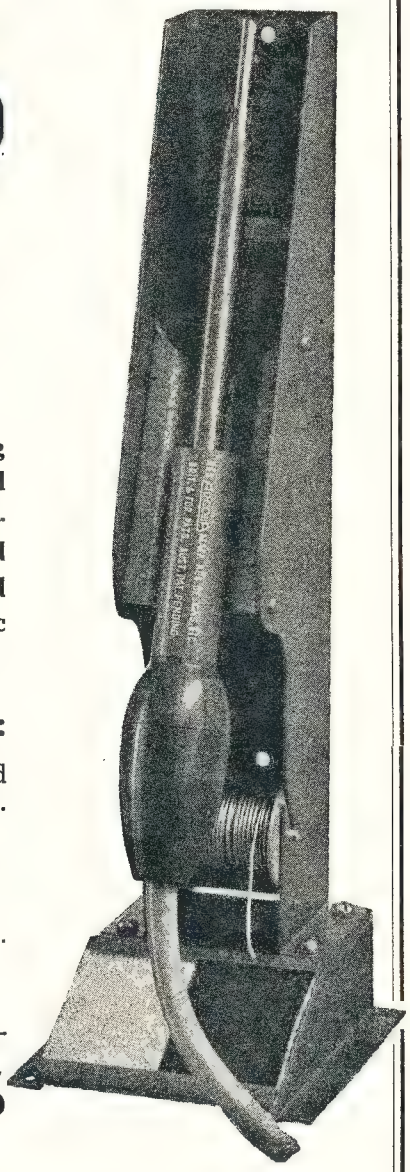
My receiver is used almost exclusively on s.s.b., but is capable of resolving quite easily any reasonable a.m. signal, DX or otherwise, in what is known as exalted a.m. reception, with the b.f.o. on.

The r.f. gain can be advanced and the 6BU8 makes quite a good a.m. detector without benefit of the b.f.o. as the tube apparently works in the form of a plate detector. However, I had a spare hole to be filled in and as greater signal handling ability with less distortion is obtainable from a diode detector, it was decided to install a diode rectifier for a.m. reception.



ADCOLA
(Regd. Trade Mark)

SOLDERING TOOLS



This range of precision made soldering tools and equipment, widely used overseas, has been designed and developed to facilitate the fastest and most efficient soldering of standard and miniaturised radio and electronic equipment.

Approved Mains Voltage Tools:

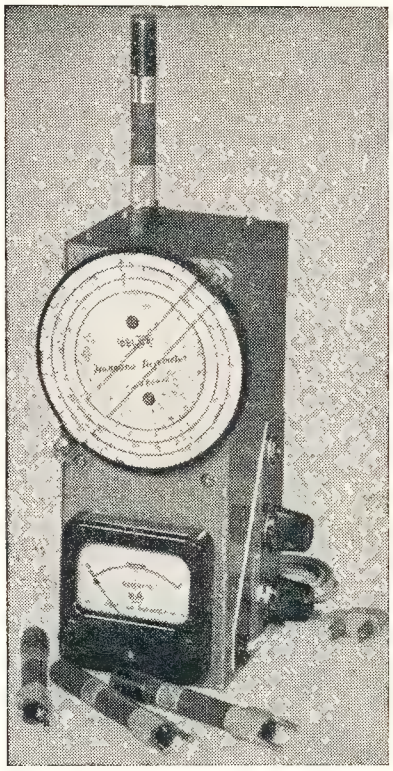
- **No Transformer required.** Supplied for all voltage ranges from 6/7V. to 230/250V.
- **Instant CORRECT Temperature.**
- **Light weight,** perfect balance.
- **Low Loading,** and cheap to operate.
- **Long life.**

Further information from Manufacturers:—

ADCOLA PRODUCTS PTY. LTD.

673 WHITEHORSE ROAD, MONT ALBERT, VIC.

Telephone 88-4351. **And all principle radio parts supply houses.**



A Precision

GRID DIP METER

From "DELICA"—

Japan's Leading Electronic Instrument Manufacturer

A compact unit (7" x 2¾" x 2¾") ideally suited to Amateur or Commercial Servicemen's requirements, the "DELICA" offers these features:—

- ★ **Continuous coverage from 3 Mc/s. to 150 Mc/s. in 4 ranges.**
- ★ **Individually calibrated to 0.1% accuracy.**
- ★ **Has dial space for two additional bands.**
- ★ **1,000 cycle modulation by switch.**
- ★ **Jack provided for monitoring.**
- ★ **3" dial for easy reading.**
- ★ **3½" x ⅜" coils for access to "hard-to-get-at" areas.**
- ★ **Instruction manual (12 foolscap pages) provided, giving valuable data on grid-dipping.**
- ★ **Self contained transformer to operate from 240v. a.c. current.**

Postage only 5/- throughout Australia.

Price £23/10/- including Sales Tax

SMITH SONS & REES LTD.

30-32 Wentworth Avenue, or G.P.O. Box 5038, Sydney, N.S.W.

Phone 2-0956

CHOOSE THE BEST—IT COSTS NO MORE

RESIN CORE SOLDERS

for reliable connections

O. T. LEMPRIERE & CO. LIMITED. Head Office: 27-41 Bowden Street, Alexandria, N.S.W. and at Melbourne • Brisbane • Adelaide • Perth

As the input to the 6BU8 is balanced and the secondary of IFT4 was already loaded with two 100K resistors to earth, a full wave rectifier using two OA85s was also connected across IFT4. The rectified output across a 250K resistor by-passed with a 250 pF. condenser is fed to one half of V7A to bring the a.m. output to approximately the s.s.b. output of the 6BU8, and fed to the a.m.-s.s.b. switch as previously stated. As no a.g.c. voltage is taken from the am. detector, it is unimportant whether the rectified voltage is positive or negative.

AUDIO A.G.C.

The audio driven a.g.c. circuit was described in "QST"[3] and readers would do well to consult the original article as I will only deal with its operation briefly.

A 6SN7 and half of V7 are used to give fast or slow a.g.c. controlled by a two-pole, three-position rotary switch mounted in the hole formally used for the selectivity pot. This switch selects a.g.c., off, fast and slow. The 7.5 volts negative bias needed for the a.g.c. operation is obtained from the filament voltage by means of a OA210 silicon diode, 600 μF. capacitor and a 1,500 ohm bleeder. The operation of the audio driven a.g.c. is as follows. V8B is an audio amplifier and when the delay voltage established at the cathode of V7B is exceeded V7B conducts and the 0.5 μF. condenser in the plate circuit is rapidly charged.

The negatively charged end of this condenser is connected to the grid of V8A and as the cathode current of V8B decreases, the cathode voltage goes instantly to ground and so will the a.g.c. line. If sufficient audio voltage is available, the a.g.c. line will drop to —7.5 volts.

By paralleling a 1 meg. resistor across the 4.7 meg. resistor between grid and plate of V8B, fast a.g.c. is obtained in the middle position of the a.g.c. switch.

In the first or "off" position the a.g.c. voltage is grounded through the 4.7K resistor. The 100K and 0.05 μF. RC combination in the cold end of the grid circuits of the controlled tubes are replaced with 1 mH. R.F.C.'s and 0.01 μF. condensers to reduce the time constant and obtain full advantage of this system. We have now covered the four most important modifications, so now we will adopt a more orderly approach and return to the front end.

R.F. AND I.F. STAGES

In the original circuit the cathode resistor of the 1st r.f. tube is taken straight to ground. This is now paralleled to the cold end of the other controlled stages and grounded through a 15K pot. The extra variable resistance in conjunction with the positive voltage applied via the 50K resistor gives better control on strong signals than the original 5K pot.

The ground connection between the 15K pot is made by a relay by the vox system or a key switch for manual operation.

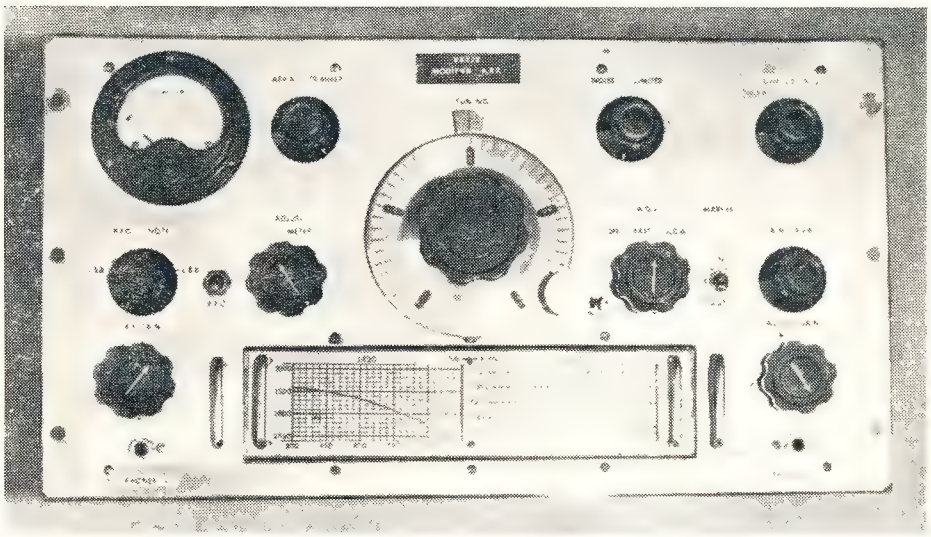
The cathode resistors were altered to 330 ohms and 100K series screen resistors were used to conform to the manufacturer's published data.

Series screen grid supply is recommended because it gives a better signal handling ability to distortion ratio. It can be seen that in the in-operative position the four EF39s only are not conducting and the rest of the set draws normal tube currents.

MIXER

The mixer circuitry has not been greatly modified, a ceramic trimmer and series trimmer were used in the oscillator section of the coil box to improve the stability. Also, the 100 pF. oscillator coupling capacitor was replaced with negative co-efficient disc ceramic and a 3 pF. negative co-efficient capacitor placed across the oscillator trimmer in the coil box.

The ECH33 oscillator plate and screen are fed through four paralleled 47K 1 watt resistors from the regulated 150 volt supply to give 100 volts.



Modified Front Panel of the AR7.

REGULATED SUPPLY

The 150C1 is adjusted to draw 15 mA. through a 5K 20 watt variable wire wound resistor and the regulated voltage is applied to 6BU8 plate and screen, ECH33 plate and screen grid, and b.f.o. plate.

CALIBRATION OSCILLATOR

The crystal calibrator tube and the 10X socket are mounted horizontally between IFT3 and IFT4, as can be seen in the photograph.

The original crystal toggle switch is used to supply h.t. to the 6BH6 in the "up" or "in" position. The output is run through shielded cable and coupled to the aerial terminal through a 100 pF. condenser. The variable trimmer is used in conjunction with WWV to bring the oscillator right on frequency.

Another coil box which will tune one of the receivable WWV frequencies or a separate receiver will have to be used as the modified Band C box and crystal locked converter will not do this.

NOISE LIMITER

I think that at best, noise limiters are a compromise as I have never had a really satisfactory one. When the ratio of the noise is large in relation to the signal, then most limiters will function satisfactorily, but the trouble arises when the signal is only a little way down below the noise. Any clipping or limiting, then affects the signal to the same extent as the noise.

As i.f. limiting upsets the bandpass curve of crystal filters, audio limiting had to be used.

I use a circuit previously described in "A.R."[4] which limits the positive and negative audio peaks. The original article did not show a grid leak on the 6V6 which is necessary, and I use a 10K s.w. pot across to the 6V6 bias, to obtain the threshold voltage and to switch the limiter out when unwanted.

TUNING

You will find that with the bandspread now available, the b.f.o. can be set in the optimum position for upper or lower sideband reception; and all tuning done with the main tuning control.

Once the optimum position for the b.f.o. control has been determined, it can be designated u.s.b. and l.s.b. and then left in either position for reception of the appropriate sideband.

TONE CONTROL

As I still had a hole left over, I used it to re-instal the original tone control of the AR7. I never use it, I doubt if anyone will, so leave it out if you have not drilled the extra hole in the top right hand corner of the panel as I had for a previous modification.

VENTILATION

As five additional tubes have been added, which means extra heat dissipation, the cabinet was drilled to take the small eyelets used on ladies' belts, 112 on the top and 64 on the back.

CONCLUSION

Of necessity, I have only given very brief outlines of the modifications, but

(Continued on Page 16)

[3] "Improved Audio Driven A.g.c. Circuit," "QST," September 1960.

[4] "Painless Noise Limiting for 13/6," "A.R.," August 1959.

AN IMPROVED T-NOTCH FILTER*

H. O. LORENZEN, W3BLC

T-NOTCH Filters have been popular with Amateurs for some time and a number of commercial receivers for the Amateur incorporate such circuits. On the crowded c.w. and s.s.b. bands, especially, the operators of today need a means of rejecting unwanted signals.

After experimenting with conventional T-notch filters with fair results, the writer decided to try some electronic tricks to deepen the notch and thus improve the effectiveness of the filter. The circuit finally evolved is shown in Fig. 1 and deepens the notch roughly an additional 15 db.

By utilising a double triode it was possible to make up for the insertion loss of the filter by using the gain from the first triode section of the 12AX7. This arrangement also allows the circuit to incorporate cathode coupling for the T-notch filter. The rest of the system is straightforward. The second half of the dual triode provides feedback which effectively increases the Q of the filter and hence the depth of the notch. Balance of the bridge in the filter is obtained by adjustment of the 25K ohms potentiometer. Once carefully set this adjustment need not be touched.

was causing major errors in the resonance values indicated on the grid dip meter.

C3 and C4 should be of the same value and the majority of the tuning capacity should be in these two silver mica units. S1 serves to remove the T-notch filter from the circuit. A toggle switch was utilised in the prototype but it should be quite simple to obtain the same function by causing the trimmer to short at one extreme of its tuning range.

A fairly simple way to construct such a unit would be to obtain an ordinary 455 Kc. air trimmed i.f. transformer and use one coil for L1, removing all except one rotor plate from C1. A ¼" brass rod should be filed to fit the slot snugly. The other trimmer can be used for C2 after removing the fixed capacity section by sawing through the support posts with a jeweller's saw and removing the extra plates.

The second coil in the i.f. transformer should be removed by sawing through the support dowel. This coil can then be used for L2 since most 455 Kc. i.f. transformers have an inductance of 1 mH. Care should be taken to be sure

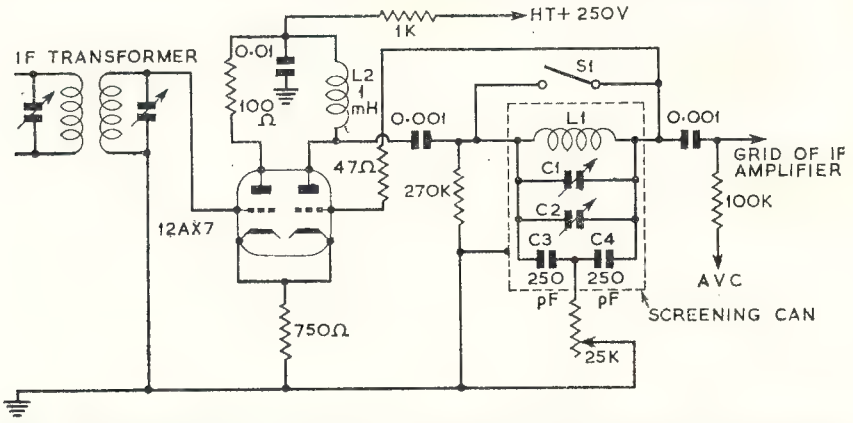


Fig. 1.—Circuit diagram of an Improved T-Notch Filter. The connection between the grid of the first half of the 12AX7 and the i.f. transformer should be as short as possible.

By utilising a b.f.o. unit with air trimmers a fairly simple modification was effected. First the knob controlled trimmer C1 was reduced to just three plates (1 rotor and 2 stator) so that it would give a suitable vernier action. Next, on the second trimmer C2 all the fixed capacity plates were removed so that the variable section then gave a change in capacity of about 25 pF. Since the inductance of L1 was approximately 1 mH. out of the can, the two silver mica capacitors C3 and C4 (each 250 pF.) were placed across the coil and the centre point brought out to the 25K ohms balance potentiometer. One caution should be mentioned here: the inductance of L1 outside the can and in the can varies widely. In this case it was sufficiently different to be outside the range of the 25 pF. trimming capacitor C2. The writer spent a weary evening determining the correct capacity values of C3 and C4 until it finally dawned on him that the shield

L2 is not too much larger than 1 mH. or oscillation may result. All the tuned circuits in the T-notch filter should be carefully shielded.

A 12AT7 has the same base connections and a higher Gm than the 12AX7 but its characteristics apparently are not suited to this service. After numerous trials with differing component values the writer was unable to obtain the satisfactory smooth operation given by the 12AX7. ●

☆

1963 PAKISTAN DAY DX CONTEST OFFICIAL RESULTS

Tiger Amateur Radio Club, Dacca, Cantt., held its first Pakistan Day DX Contest on the occasion of Republic Day on 23rd March, 1963. The Contest has been sponsored to establish maximum contacts with Radio Amateurs all over the world and to give new country and zones for D.X.C.C. award.

A handsome 14 x 11 inch oriental design certificate with T.A.R.C. golden seal affixed on varied colour ribbons has been issued to leading operators in each country/call area. VK3HL was the Australian winner and recipient of a certificate. —VK4SS.

* Reprinted from R.S.G.B. "Bulletin," Feb. '63.

THE CALL OF THE UNTAMED

The time was 04 hours E.A.S.T.
And twenty was as quiet could be.
No one it seemed but me,
Was waiting for one VK4HG.

If luck on me would but smile,
This op. from stormy Willis Isle,
Might hear me if I called a while—
But I sensed a waiting pile.

Dare I risk a short blind shout,
On the chance he'd be about.
No harm, if it raised but nought
So I tapped the call sign out.

Hell cut loose, as thousands bawled
4HG they blindly called.
And while the QRM hung palled,
Beams were swung and wildly hauled.

A lonely TI2 was there,
With a note like steak done rare.
As other tuned, I do declare,
'Twas like a madman's nightmare.

Code and sideband vied for space,
In this fiendish DX Race.
And to help it on apace,
The a.m. men joined in the chase.

And from the low end to the high,
For a cycles space did vie.
These DX busters from the sky
Hounding one unlucky guy.

Calling for an hour straight
With every guile and every bait.
The weakest at the wall must wait,
For in this, no man's a mate.

But where was Willis, all this while?
Only silence from the Isle,
Echoed back 6,000 mile,
To the madly waiting pile.

But did the truth ever dawn,
On the tumult, greedy, torn,
That Willis, isolate, forlorn,
Had never sent a sig that morn.

—Al, VK4SS.

TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

☆

Manuscripts should preferably be typewritten but if handwritten please double space the writing. Drawings will be done by "A.R." staff.

☆

Photographs will be returned if the sender's name and address is shown on the back of each photograph submitted.

☆

Please address all articles to the

EDITOR "A.R.,"
P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

A Crystal Controlled Converter for 576 Mc.

C. J. KOSINA.* VK6LK

VERY little has been published in "A.R." regarding stabilised receiving equipment on the u.h.f. bands. Since a transmitter for this band was described recently† it was thought logical that this should be followed by a description of a suitable converter. The circuit is, of course, only a suggested design and many modifications should be possible.

R.F. AMPLIFIER

The tube type used here, an EC88, is a recent release by Mullard.‡ It is a triode, very moderately priced, designed for grounded grid operation up to 1,000 Mc. and will actually give a gain of 8 db. at 1,400 Mc. The gain at 600 Mc. is 18 db. with a noise figure of 9 db.

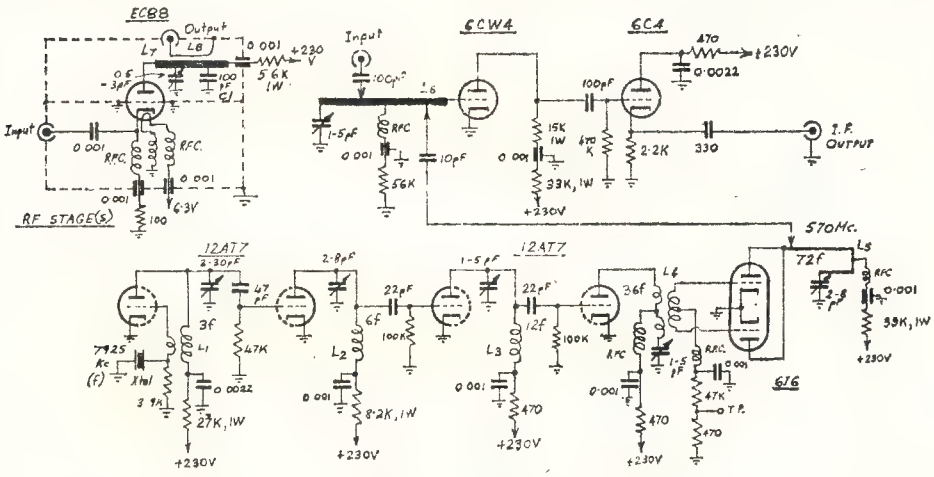


Fig. 1.—576 Mc. Converter. All resistors ½w. unless otherwise shown.

Constructional details of the amplifier are given in Fig. 2. A quarter wave trough line is used in the plate and resonated by a 0.5-3 pF. ceramic trimmer. The 100 pF. capacitor (C1) alters the electrical length of the line and when placed 1" from the plate pin, the trimmer resonates the circuit in the middle of its tuning range. The amplifier is thus capable of operating over a wide range of frequencies and could be used on the 432 Mc. band by simply altering the position of C1.

There is apparently little spread of characteristics of the tubes, five different tubes tried in the amplifier gave almost identical performance with only a slight re-tuning required. There were no instability problems, even when four stages were connected in cascade and the total r.f. gain under such circumstances being about 70 db. It is recommended that at least two stages are used so that mixer noise will not be significant.

Another tube tried was the 6CW4. However, due to the construction of this tube, it has a high plate-cathode capacity and to date the author and others have not succeeded in constructing a sufficiently stable stage using this tube. If stabilised, the 6CW4 should give about the same gain as the EC88 but with a lower noise figure.

MIXER STAGE

A 6CW4 nuvistor triode is used in grounded cathode configuration, with a series tuned grid circuit. Both oscillator and signal are capacitively coupled to taps on the grid line. The layout of the mixer is shown in Fig. 3.

A simpler mixer circuit requiring no adjustment is a grounded grid type. Both signal and oscillator are applied to the cathode which is connected to ground via an r.f. choke. The heater supply is also through r.f. chokes and the grid is connected directly to ground. With this circuit, however, considerably more oscillator injection is required and the gain is slightly down on the grounded cathode type.

The noise figure of the 6CW4 as a mixer at this frequency is quite high and considerable preceding amplification is required before the mixer noise becomes insignificant.

OSCILLATOR MULTIPLIER CHAIN

Half a 12AT7 is used as an overtone oscillator on a frequency of 23.75 Mc. (crystal 7920 Kc.). The second half doubles to 47.5 Mc. The second 12AT7 doubles to 95 Mc. and triples to 285 Mc. About 0.25 mA. grid drive is available to the final multiplier which is a 6J6 push-push doubler to 570 Mc., thus giving an i.f. of 6 Mc.

The layout of this section is not critical (Fig. 4), the only major requirement is that the 6J6 be reasonably close to the mixer stage. The amount of injection may be varied by altering the plate voltage of the 6J6, and best signal to noise ratio occurs at about 65 volts.

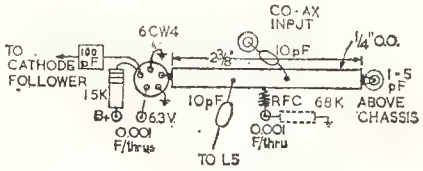


Fig. 3.—Layout of Mixer Stage.

COIL DATA

L1: 9 turns, ¾" diam., ¾" long, 20 B. & S. enam.; feedback, 3 turns hook-up wire around cold end.

L2: 10 turns, ⅝" diam., 1" long, 16 B. & S. enam.

L3: 8 turns, ⅝" diam., ¾" long, 16 B. & S. enam.

L4: Plate—4 turns, ½" diam., ½" long, 18 B. & S. enam. wound as 2 + 2 turns with gap in centre for grid winding; c.t. for r.f.c.
Grid—2 turns, ⅝" diam. 18 B. & S., adjust length to resonate with input capacity of 6J6.

L5: Hairpin loop, 1½" long, ¾" diam. (total length of wire approx. 3½"), 16 B. & S. silver plated, tapped ½" from plate pins for osc. output, centre tap for r.f.c.

L6: 2⅜" x ¼" copper tubing (preferably silver plated), centre tapped for r.f.c.
Osc. injection—approx. ½" from r.f.c. tube side.
Input—approx. ½" from r.f.c 1-5 pF. trimmer side.

L7: 2" x ¼" copper tubing.
0.5-3 pF. trimmer connected ⅜" from plate pin.
C1 tap—see text.

L8: 1" long loop, parallel to L7.

All r.f.c's. are quarter wave long wire wound on convenient diameter.

(Continued on Page 16)

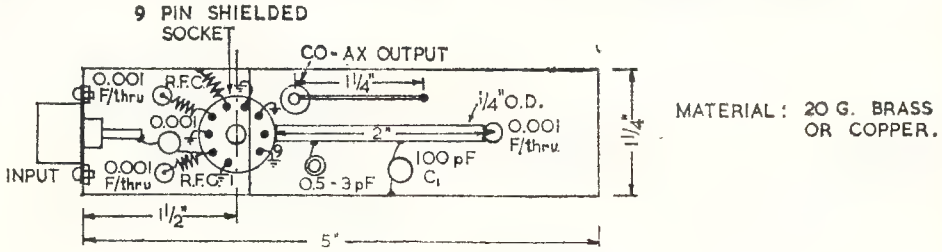


Fig. 2.—R.f. Amplifier Layout.

* 21 Darnell Avenue, Mt. Pleasant, W.A.

† "Amateur Radio," November 1962, p. 6.

‡ "Mullard Outlook," Vol. 5, No. 4, July-August 1962, p. 47.

INTERNATIONAL RADIO AMATEUR

WORLD PREFIX MAP

- 29" x 42" on Heavy Stock.
- Printed in Four Colours.
- Mercator Projection.
- Complete Details.

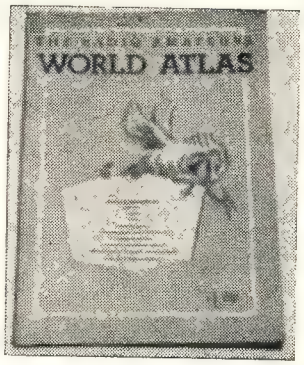
26/3
Post Paid

This unabridged Map shows Capitals and Major Cities of every land. At a glance, there are Radio Amateur Prefixes by Country . . . alphabetically-listed Prefixes . . . Countries and Continents . . . DX Zone Index . . . World-wide Time Zones.

THE RADIO AMATEUR'S

WORLD ATLAS

26/3
Post Paid



- All six Continents of the World.
- West Indies-Caribbean area.
- Polar Projection of the world.
- Complete Country Prefix Index.
- Country Prefixes & Zone Boundaries on each map.
- 4 beautiful colours.
- Sixteen pages of 8¾" x 12" on quality paper stock.

Only complete World Atlas compiled especially for Radio Amateurs. Continents are in the Lambert Azimuthal equal-area projection showing correct areas with minimum distortion. A compact and informative reference.

★ SPECIAL

One Only. Lafayette HE-30 Com. Receiver with pre-selector and speaker. Price £55.

TEST EQUIPMENT

5" OSCILLOSCOPE

Vertical Amplifier flat from D.C. to 4.5 Mc., useable to 10 Mc., push-pull throughout. Horizontal Amplifier flat from 1 c.p.s. to 400 Kc. Sweep Frequency 10 c.p.s. to 100 Kc. Complete with THREE Probes (demodulator, direct, low capacity). PRICE **£84/1/0.**

SWEEP AND MARKER GENERATOR

Five fundamental **sweep** ranges 3 to 216 Mc. Three fundamental and one harmonic **marker** ranges 2 to 225 Mc. External crystal socket, attenuators. Continuously variable marker size, 4 step decade coarse and fine for sweep and marker output. Complete with 5.5 Mc. crystal. PRICE **£63/6/0.**

SIGNAL GENERATOR

Frequency 75 Kc. to 150 Mc., 1% accuracy on all seven ranges. Output, over 100,000 microvolts, 400 c.p.s. internal modulation plus provision for external modulation. Voltage regulated, stabilised power supply. PRICE **£48/4/0.**

V.T.V.M.

Peak to peak. BIG 7½" Meter. Seven non-skip ranges on all four functions, e.g. + D.C. Volts, — D.C. Volts, A.C. Volts, Ohms. Zero centre facility. 1% ceramic resistors. Frequency response 30 c.p.s. to 250 Mc. Complete with two probes, R.F. and UNI probe (enables Ohms, A.C. and D.C. Volts to be measured with the one probe). PRICE **£40/3/0.**

FULL DETAILS OF ABOVE INSTRUMENTS AVAILABLE ON REQUEST

★ TUNING WANDS

An invaluable aid to resonating tuned circuits in Receivers and Transmitters, etc.
Full details supplied with each Wand. Price 7/6 each.

CRYSTALS, FT241: 455 Kc., £2. 455.555 Kc. **30/-.** Channel 40 through to Channel 54 **30/-.** These Crystals are ±5 cycles of their frequency. **These Crystals can also be supplied in sets to your Filter requirements.**

CRYSTALS, HC6/U: 1000 Kc., 1500 Kc., 3500 Kc., 7000 Kc., 8030 Kc., 8333.3 Kc., 8343 Kc., 14000 Kc., 21000 Kc., 46.000 Mc., 72.100 Mc., **£4 each.** 100 Kc. Marker Crystals, **£4/16/0.**

All goods despatched by Certified Mail. Be sure to include your full address and cheque or money order with your order.

PHONE OR MAIL ORDERS ONLY
NO CALLERS PLEASE
PHONE: XJ 6181, XJ 2353

TRANSTRONIC PRODUCTS

123 BALGOWLAH ROAD, FAIRLIGHT, N.S.W.

VK-ZL OCEANIA DX CONTEST, 1963

W.I.A. and N.Z.A.R.T., the National Amateur Associations in Australia and New Zealand, invite world wide participation in this year's VK-ZL Oceania DX Contest.

Objects: For the world to contact VK, ZL and Oceania stations and vice versa.

When? Phone: 24 hours from 1000 GMT, Saturday, 5th October, to 1000 GMT, Sunday, 6th October. **C.w.**: 24 hours from 1000 GMT, Saturday, 12th October, to 1000 GMT, Sunday, 13th October.

RULES

1. There shall be three main sections to the Contest:—
   (a) Transmitting phone.
   (b) Transmitting c.w.
   (c) Receiving—phone and c.w.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non land-based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used but no cross-band operation is permitted.

4. Phone will be used during the first week-end and c.w. during the second week-end. Stations entering both sections must submit separate logs.

5. Only one contact per band is permitted with any one station for scoring purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign. (Not applicable to overseas stations.)

7. Entrants must operate within the terms of their licences.

8. **Cyphers**: Before points can be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telephony) or RST (c.w.) report plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact; e.g. if the number chosen for the first contact is 053, then the second must be 054, followed by 055, 056, etc. If any contestant reaches 999, he will start again from 001.

9. **Scoring**: (a) **For Oceania Stations other than VK/ZL**: 2 points for each contact on a specified band with VK/ZL stations; 1 point for each contact on a specific band with the rest of the world.

(b) **For Rest of the World other than VK/ZL**: 2 points for each contact on a specific band with VK/ZL stations; 1 point for each contact on a specific band with Oceania stations other than VK/ZL.

(c) **For VK/ZL Stations**: 5 points for each contact on a specific band and in addition, for each new country worked on that band, **bonus points** on the following scale will be added:

1st	contact—	50	points
2nd	„	40	„
3rd	„	30	„
4th	„	20	„
5th	„	10	„

For this purpose the A.R.R.L. countries list will be used with the exception that each **call area** of W/K, JA, SM, UA will count as "countries" for scoring purposes as indicated above.

10. **Logs**. (i) **Overseas Stations:**
(a) **Logs** to show in this order: date, time in GMT, call sign of station contacted, band, serial number sent, serial number received, points. **Underline** each new VK/ZL call area contacted and use a different log for each band.
(b) **Summary** to show: call sign, name and address (**block letters**), details of equipment, **total score** by showing sum of VK/ZL call areas worked on all bands and total points for all bands. Sign a declaration that all rules and regulations were observed.
(ii) **VK/ZL Stations**: (a) **Logs** must show in this order: date, time in GMT, call sign of station contacted, band, serial number sent, serial number received, contact points, bonus points. Use a **separate log** for **each band.**
(b) **Summary** to show: call sign, name and address in **block letters**, score for **each band** by adding contact and bonus points for that band and as well, **total score** by adding band scores together, details of equipment used and power, declaration that all rules and regulations have been observed.

11. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

12. The ruling of the Federal Contest Committee of the Wireless Institute of Australia will be final.

13. **Awards. VK-ZL Stations:** The W.I.A. will award certificates to the top scorer on each band and the top scorer in each VK-ZL district.

Overseas Stations: Certificates will be awarded to each country (call area in W/K, JA, SM, UA) on the following basis:
1. Top scorer using "all bands".
2. Top scorers on individual bands.
3. To those with minimum contact requirements to be determined by conditions and activity prevailing.

14. **Entries** from **VK-ZL Stations** should be posted direct to Federal Contest Committee, Wireless Institute of Australia, Box 638J, G.P.O., Brisbane, Australia, to arrive not later than 31st December, 1963.

Entries from **Overseas Stations** should be posted to Federal Contest Committee, Wireless Institute of Australia, Box 638J, G.P.O., Brisbane, Australia, to arrive not later than 19th January, 1964.

RECEIVING SECTION

1. The rules are the same as for the transmitting section, but it is open to all members of any S.w.l. Society in the world. No transmitting station is permitted to enter this section.

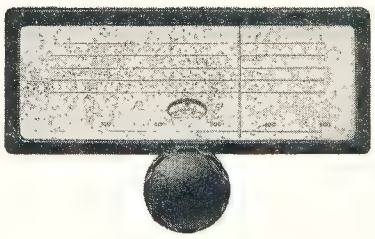
2. The Contest times and logging of stations on each band per week-end are as for the transmitting section.

3. To count for points, logs will take the same form as for the transmitting section as follows: date, time (GMT), call of the station heard, call of the station he is working, RS(T) of the station heard, serial number **sent** by the station heard, band, points claimed. Scoring is on the same basis as for the transmitting section and the summary sheet should be similarly set out.

4. Overseas stations may log **only** VK-ZL stations, but VK receiving stations may log overseas stations and ZL stations; while ZL receiving stations may log overseas stations and VK stations.

5. Certificates will be awarded to the top scorer in each VK-ZL call area and in each overseas scoring area.

EDDYSTONE
PRECISION DIAL



Cat. No. 898

GEARED SLOW-MOTION DRIVE ASSEMBLY

A high grade assembly designed for instrument applications. The movement is gear-driven and fly-wheel loaded, giving a smooth, positive drive, with a reduction ratio of 110 to 1.

The pointer has a horizontal travel of 7 inches. A circular vernier scale, marked over 100 divisions, rotates five times for one traverse of the pointer, and, read with the "100" scale on the dial, provides a total of 500 divisions.

A diecast escutcheon, finished glossy black, is supplied and the assembly is complete with perspex window, knob, fixing screws, and mounting template. Overall external dimensions are 9-3/16" (23.34 cms.) by 5¾" (14.6 cms.). Weight is approx. 1 lb. 14 ozs. (0.85 kilogrammes).

Price: £9/17/9 inc. S.T.

DISTRIBUTED BY—

WILLIAM WILLIS
& CO. PTY. LTD.
428 Elizabeth St., Melbourne

C.C. CONVERTER FOR 576 Mc.

(Continued from Page 13)

OPERATING CONDITIONS

6BL8 oscillator: 100 v. at 5 mA.
6BL8 doubler: 185 v. at 5.5 mA.
12AT7 doubler: 220 v. at 5 mA.
12AT7 tripler: 220 v. at 4.5 mA.
6J6 doubler: 65 v. at 3 mA.
6C4 cathode follower: 230 v. at 4.5 mA.
6CW4 mixer: 65 v. at 3 mA.
EC88 r.f. amplifier(s): 160 v. at 12.5 mA. each.
Total current drain (excluding EC88s) 35 mA. at 230 v.

PERFORMANCE

No accurate test equipment was available for checking the performance of the converter, however an approximate measurement indicates a noise figure of about 10 db. At the time of writing, an r.f. amplifier using a special low noise u.h.f. tube is under construction and this should bring the noise figure down to 5 db. A description of this amplifier should follow soon.

Activity on 576 Mc. is very limited and as a result, literature on this band is very scarce. The author would welcome any correspondence regarding this and other u.h.f. bands. ●

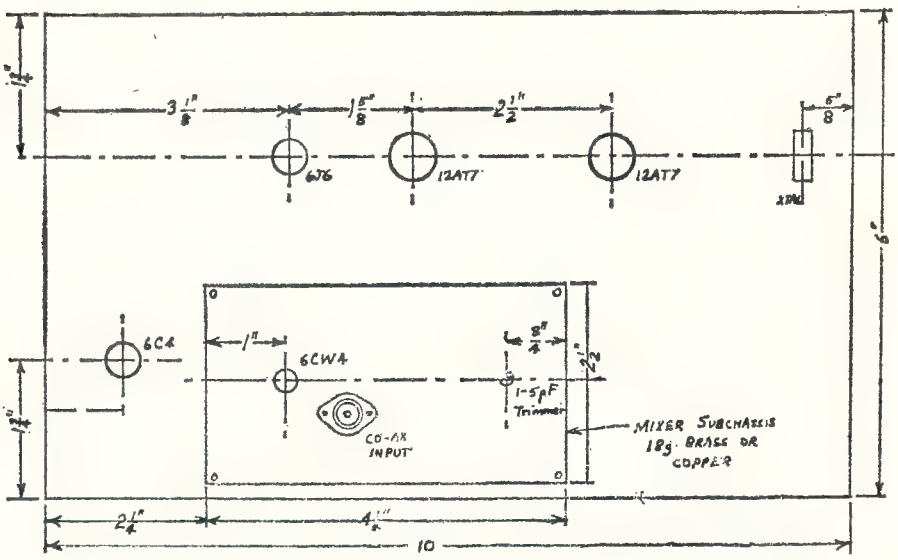


Fig. 4.—Converter Layout. Chassis: 18 gauge aluminium, 10 x 6 x 2½ inches.

PORTABLE BATTERY CHARGER

(Continued from Page 7)

could be operated to more than full brilliance, while a charging rate of 2 amps was being maintained through the battery.

CHECKING "SLIP" ON THE COUPLING UNIT

This was done by using a small neon lamp as a "strobe-light." Only one lead was used. This was connected to the spark plug, the other was insulated. (See Fig. 3.) When the engine is running at full load, hold the neon near the coupling unit. If there is no "slip," the coupling will appear to be stationary. This test should be carried out in darkness for convincing results.

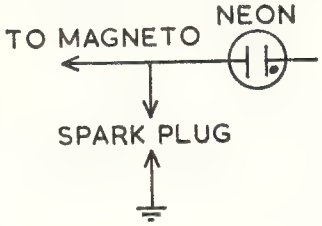


Fig. 3.

NOISE SUPPRESSION

No attempt was made to regulate the voltage or provide any means of filtering. Likewise ignition suppression was not incorporated, but may be considered according to requirements. The complete motor-generator was mounted on a Holden muffler, which provided a rigid base and a good means of silencing the exhaust. To remove condensation from the silencer, a drain plug was fitted at its lowest point.

USE

The prototype was tested over a period of two weeks in December 1962, when it gave a reliable performance with adequate charging and lighting facilities in a mobile marine station. The unit is continuing to prove invaluable, when operating a portable station in areas where electric supply is unavailable.

☆

MODIFYING AR7 FOR S.S.B.

(Continued from Page 11)

those who tackle the job should have no trouble doing them their own way.

It should be obvious that extensive use of plastic covered shielded wire will have to be made, especially to the various controls.

I trust that you have been interested in the modifications to the AR7. You will no doubt be able to criticise or improve many of them, and I would like to hear from others who have carried out modifications.

An extra triode, for instance, could be made available by replacing the 6V6G with a 6BM8 or similar output triode-pentode. However, these modifications will do two things for sure. Give you a really hot s.s.b. receiver which is a pleasure to operate, and teach you a little more about s.s.b. receiver techniques whilst you are carrying them out. ●

HINTS AND KINKS

PRINTED CIRCUITS—COMPONENT REMOVAL

Removal of components from printed circuit boards can be simplified by the use of the following equipment. Furthermore, heat damage to diodes and transistors can be kept to a minimum by this method.

Procedure: Use a vacuum cleaner fitted with a suitable length of strong walled p.v.c. tubing (or brewer's hose) of about 15-20 mm. diameter connected to the suction side of the cleaner.

Suitably fit into the working end of the larger diameter p.v.c. tubing, a short length of 3-4 mm. teflon tubing (about 1 inch length is ample).

Apply a hot soldering iron to the area of printed circuits until solder melts freely, then suck away the molten solder. Solder shall be completely removed, leaving the pigtails and the feed-through holes clear, giving easy access to bend pigtail for component removal.

Where suspect transistors are removed for testing, continued application of suction has a cooling affect on the pigtail.

The 15-20 mm. tubing should not be longer than that to give convenient use of the vacuum cleaner on the workshop bench. The 1 inch length of 3-4 mm. teflon tubing is specified for two reasons:—

(1) To keep the suction pressure up.
(2) When solder is sucked up, it will set and lodge in a long length. It is a good practice to clean out the tubing (the 1 inch length) after each clean up of a solder point.

Caution! Teflon (tetrafluoretylen-polymere) will give off slight gasses above 250-275°C., which under prolonger dosage can be fatal.

☆

AMENDMENTS TO R.D. CONTEST RULES

Rule 2: Members and non-members of the W.I.A. will be eligible for the awards.

Rule 14: Northern Territory and A.C.T. will both count as separate call areas for award purposes only.

☆

ACKNOWLEDGMENT

It is regretted that credit was omitted from the article "Profile of VK3ZEB" published in the last issue. We are indebted to N. Town, VK3ANK for providing this article.

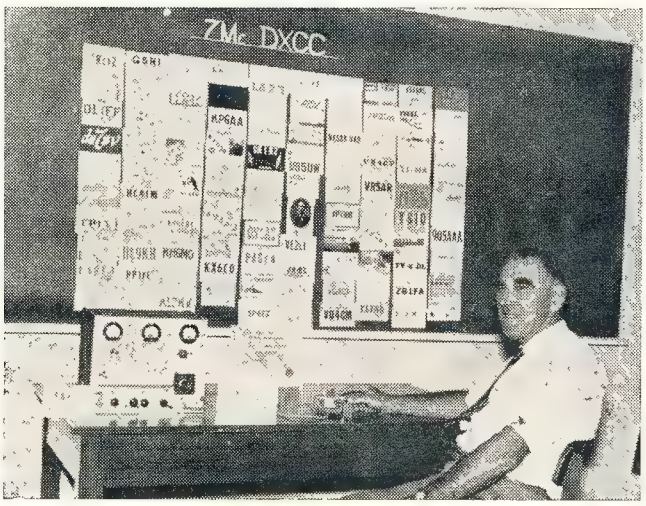
VK5JE OBTAINS D.X.C.C. ON 7 Mc.

TED has been interested in Amateur Radio since 1924, back in the days of the crystal and catswisker, and when 80 metres was considered "short waves".

Receiving his licence (No. 306) in 1926 at the age of 18, activities were confined mostly to the 80 metre and the 200 metre bands. Many broadcast listeners, if they are still alive, will remember "2JC Concord," operating on the broadcast band when the "regular" broadcast stations had closed down.

Migrating to Adelaide in 1935, he was allotted the call VK5JC and as such became a 14 Mc. phone addict, being responsible for some of the first regular VK-W contacts. In those days the number of VKs operating DX phone could be counted on two hands—now you would need a computer.

During the war, Ted was in the 2/1 Fortress Signals A.I.F., located on Timor, where the Japs found him in Feb. 1942. Many years were spent up in Thailand on the infamous Burma Railway, but even whilst a P.O.W. he managed to work three undercover radio receivers for which he received a "mention-in-despatches" award.



There is no doubt that Amateur Radio proves a good training ground for future trained personnel in times of National emergency. (Are you on the beam, Canberra?)

Returning to Adelaide in 1946, Ted was given the call VK5JE, his old one having lapsed, and resumed activities on 14 Mc. The sudden growth in the popularity of three element beams made competition a bit too fierce so it wasn't long before eyes were cast on 7 Mc. Did it hold any possibilities for DX? Most of the gang said, "Who cares," but nevertheless it must be remembered that it **is** a Ham band after all.

Well after 11 years' work on the band D.X.C.C. has at last been acknowledged with Certificate No. 77. Ted comments, "Guess it is time to see what 80 and 160 metres really offers. What's that I hear?" "What about 6 and 2 metres?" "Maybe I get a bit nostalgic for my first love after Hamming for 37 years."

LIST OF COUNTRIES SUBMITTED FOR D.X.C.C.

The following countries were submitted for D.X.C.C. award. Figures in the right hand column indicate number of times a QSO was had with that country.

CM	2	KR6	6
CR9	2	KS4	2
DL	39	KS6	1
DU	5	KV4	3
EA	1	KW6	5
EI	2	KX6	5
EP1	1	KZ5	1
FA8	2	LA	1
F	10	MP4	1
FK8	6	OA	2
G	60	OE	2
GI	1	OH	16
GW	1	OK	7
HA	3	ON	1
HB	6	PA0	6
HC	2	SM	10
HK	3	SP	4
HL	6	TI	1
HP	4	UA1	2
HS	3	UA0	15
HZ	1	UB5	4
I	7	UC2	2
JA	183	UL7	1
K/W (see below)		VE	174
KC4	3	VK1 Macquarie Is.	4
KC6	5	VK Lord Howe Is.	1
KH6 Hawaii	57	VK	
KH6 Kure Is.	2	VK9 Papua	2
KJ6	1	VK9 N. Guinea	4
KL7	30	VK9 Norfolk Is.	3
KM6	4	VP5	3
KP4	13	VP6	1
KP6	2	VP7	1
		VP9	2
		VQ2	6
		VQ3	3
		VQ4/5H3	12
		VR1	7
		VR2	14
		VR3	1
		VR4	2
		VR5	2
		VS1	14
		VS2/9M2	4
		VS4	2
		VS6	2
		VS7	5
		VS9	1
		VU	2
		XE	8
		YJ	4
		YO	3
		YS	1
		YU	5
		YV	11
		ZB	1
		ZC4	2
		ZD6	1
		ZE	11
		ZK	2
		ZL	
		ZM6	1
		ZS	14
		9Q5 Congo	2
		4X4	3
		5X5 Uganda	1
		5N2	4

The following have been worked but as yet no QSL has been received:—

KG6	12	FW8	1
PK2	1	HI	5
LZ	3	AC4 (Phoney?)	
FB8XX	1		

The above indicates that 934 DX contacts (excluding W and ZL) have been made on 7 Mc.

Below are details of W QSOs (this includes many repeat QSOs with the same station but no skeds kept):—

W1	315	W6	893
W2	811	W7	342
W3	450	W8	569
W4	444	W9	390
W5	371	W0	252

The grand total of DX worked on 7 Mc. is 934 plus 4,837 W contacts, making a total of 5,771 (excluding ZL of course).

For those interested in statistics, the above figures have been tabulated in yearly QSOs also and this information is available for the asking of VK5JE.

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

INTERNATIONAL FRIENDSHIP

Editor "A.R.," Dear Sir,

On more than one occasion in the past I have received W QSLs carrying, besides the relevant QSO data the caption "Hams for Christ," etc.

These Hams who use (or allow to be used) Amateur Radio for religious compaigning, are taking the first step to destroy Amateur Radio's finest spirit, i.e. true friendship.

While I readily admit that one's personal philosophy or religion must encompass every aspect of one's existance, the introduction of a flavouring of religion, politics or color or creed into Amateur Radio will soon render suspect the now impeccable hand of international friendship which exists.

—Al Shawsmith, VK4SS.

☆

HISTORICAL GLEANINGS—1914

In this year, under the title of "Wireless in Australia," the (then) Wireless Institute of Victoria, of Oxford Chambers in Bourke St., Melbourne, published a booklet containing the following information about Australian radio stations:—

Commercial calls, land stations (including Army and Navy stations), 33.

Commercial calls, ship stations (including all Navy and Merchant Marine ships frequenting Australian waters), 309.

Experimental calls: N.S.W. 167, Vic. 185, Qld. 10, S.A. 20, W.A. 12, Tas. 10, total 404.

The preface of the booklet stated that it was the first of its kind for Australia, and filled a long felt want by Wireless Experimenters. The booklet also quoted some of the objects of the Wireless Institute of Victoria. These were very simple and served as a basis for the constitution under which W.I.A. operates today.

The office-bearers of W.I. (Vic.) at this time were: President, Vernon Cole; Vice-Presidents, W. King Witt (XKW) and F. F. O'Shannessy; Council: Douglas Harrison, Herman Lindow and John Strickland (XJS); Hon. Corresp. Sec., W. Endacott; C. R. Dodson; Hon. Org. Sec., John Welch (XJCW); Hon. Treasurer, Angus McGregor (XJEA); Postal Address, Box 1006, G.P.O., Melbourne; official station call sign, XPJ.

Office-bearers of W.I. (N.S.W.) were President, C. P. Bartholomew (XBM); Hon. Sec., Malcolm Perry (XCP); Assist. Hon. Sec., N. H. Wright (XFQ); Postal address, Box 2, King St. P.O., Sydney; official station call sign, XADK.

Advertisers were: Lawrence & Hansen, Marconi Telefunken School of Radiotelegraphy, MacLurcan & Lane, Warburton & Franki Melb. Ltd.

Amongst the items offered for sale, which now only have historical value, were h.t. coils and spark gaps.

Prior to the publication of this booklet, the information available is somewhat sketchy; however indications are that individual experimenters were at work as early as 1900.

In 1901 Bill Jenvey made the first wireless tests with the S.S. "Ophir," when King George V. (then Duke of York) visited Australia.

By 1908 quite a few spark coil transmitters were being used by experimenters—receivers employed Coherer detectors which consisted of a tube full of filings, which were caused to cohere by the incoming signal, and decohere upon receipt of vibrations from a buzzer or bell.

1909 saw the introduction of galena and iron pyrite detectors complete with catswhiskers.

In 1910 occurred the first recorded incident of Amateur interference with another service. An unfortunate event, as the service affected was that of a ship in distress; however the situation was recouped in 1911 by another Amateur, who was the only one to hear and report a ship's distress signal. Both events took place in U.S.A.

DX

VP4, OA4, BV, ZM7, 7G1, FP, AC5, MP4, ZC6, TY2

Sub Editor: ALAN SHAWSMITH, VK4SS (Phone 4-6526, 7 a.m.-4 p.m.)
35 Whynot Street, West End, Brisbane, Qld.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Here's a laugh! I resigned from this job last month. Now confronting me is a pile of DX overseas mail and sundry letters and notes. A shocking waste to consign same to the paper basket. So here we go again.

The few times I managed to listen on 7 and 14 Mc., conditions were fair to good, however reports to hand say the bands have been patchy and uncertain. 80 and 15 mx are simply one long frustration as far as DX is concerned.

NOTES AND NEWS

A letter from W4VPD says that IT1TAI will be operating as IS1TAI from Sardinia during late July and August. Then, if he can attain a licence, will operate from the rare spots FC, HB1, 3V8, etc. He will look for VKs on the l.p. between 18-23z and s.p. 06z. QSLs go via Enos W4VPD.

The following short items may be of interest:

Easter Island: Listen for CE0AB on 14040 kc. at 0100-2000z, and CE0AC on 14053 kc. at 0200-0300z.

Niger Republic: 5U7AH on 14130 kc., listening 14260-75 kc. s.s.b., 2100-2200z.

Singapore: VS1LW on 14265-75 kc. s.s.b., 1300-1400z.

Jordan: JY1US reported on 14030 kc. at 1930z.

Algeria: 7X2VX active on 14340-50 kc. s.s.b. around 2100-2200z. (QSL via W4UNG.)

Canton Island: KB6EPN and KB6CB monitor 14275 kc. s.s.b. daily 0300-0600z. A call will probably raise them.

HL9KH and **KG6AOK** may be found most mornings 1100-1200z on 14250-300 kc.

Faeroes Islands: OY1R has been on 14010-20 kc. past few days around 1130-1230z.

Dodecanese Islands: SV0WQ, Rhodes, schedules SV0WB every Saturday at 0800 GMT on 14035 kc. s.s.b.

Burma: XZ2KN on every day about 1500-1600 GMT, 14040-050 kc.

Congo: TN8AF worked at 2040 GMT on 14040 kc.

For those still wondering, 9M1MN was the call sign of the Mt. Everest expedition. This station was based at Katmandu.

Official Bulletin No. 895 A.R.R.L., April 25, 1963, advises of the addition to the A.R.R.L. Countries List of Glorioso Islands. Glorioso Is. are French territory under the administration of the Overseas Dept. of Reunion and located off the northern tip of the Malagasy Republic, which separates them from Reunion. D.X.C.C. credit, claims for contacts with the Glorioso Is. may be made, starting 1st Aug., 1963. Such confirmations must be for contacts made 25th June, 1960, or later. Confirmations for Glorioso Is. credit, received before 1st Aug., 1963, will be returned without credit.

The following are by courtesy of N.C. DXer:

4WI: No further VS9/4W1 trips are planned until cooler weather (after October). However Gus may go there soon.

3A2CD is active on 14035 kc. about 2100z, looking for W6/7.

OY2H is xtal controlled on 14026 kc. at 1700z.

VR6AC is in KZ5 for very serious cancer operation.

VS5CW is on 14 Mc. c.w. Reported from 15-16z on 14080 kc.

4S7IW on 1425 5kc. s.s.b., 1630z on Sundays.

FF8AN/BT are both phonies!

KH6PD/KG6 on 14295 kc. from 2000z to 2030z.

KC6BO has returned to W.C.I. He's mostly s.s.b.

160 metres: U.S. Coast Guard has removed the NO S.S.B. clause, so s.s.b. is again legal for Ws.

9M2GV/VS5, etc., has been delayed due to political trouble.

From Traffic News comes these items by courtesy of ON4OC:

QSOs with VQ9A/8C are not valid for D.X.C.C. Official licence has not been granted.

Look for FB8WW, Crozet Is., now on 7 Mc. A good time might be 1600z.

HB9AAV/FL and HB9AAW/FL are expected to operate from Leichenstein late July into August. All modes, all bands.

ZD7BW, G3PEU are expected to be in St. Helena from August for five months. QSL to G3PEU.

ZL3VB is sporadically active from Chatham Is., 14065 c.

KB6CP, Canton Is., 14250 and 14300 kc. s.s.b., 070-0900z. QSL to PB5, Canton Is.

VR3O is a regular on s.s.b. 14310 kc. at 0700z. Also c.w. QTH, Xmas Is.

ZK1BS will soon be leaving Raratonga after eight years activity.

UA0AV, DK, EK, LA are all s.s.b. in Zone 19. UA0EH is Zone 25.

Extract from A.R.R.L. Bulletin re Country Designation: "In cases of dispute between countries (and some disagreements continue) we have been obliged to turn to the U.S. Dept. of State, as well as the leading geographical societies of the world, to secure information. Geographical separation from the mainland may serve to place an area on the Countries List, even if the political set-up alone would not permit it to make the grade. Where foreign territory divides a country, a minimum of 75 miles of foreign land, separating the two areas in question, is required. This distance requirement does not apply in the case of Island Groups. Where a place has no political administrative sovereignty, it must be at least 225 miles from the nearest land to which it is administratively attached, to be considered for separate country status. This point, however, does not apply to islands in a natural island grouping, such as the Marquesas in Fr. Oceania, for example. The geographical position, as well as the form of government, with its degree of autonomy, representation, or integration, has to be considered. It is because of these many factors, that there is a functioning A.R.R.L. staff D.X.C.C. Awards Committee of seven, so policy or listings are not responsive to the whim of any individual person or to the pressures of those who have special axes to grind."

Among the locals: Bram VK5AB did not make it to Willis Is. (What about a PK expedition, OM?—Al.) Ken VK3TL came out second in c.w. section in the last VK/ZL Contest. Frank VK2QL records his WPX tally as 411. (In future, WPX scores will not be listed three monthly, but printed as they come to hand.)

ACTIVITIES

Eric BERS195 lists the following heard. 1.8 Mc. a.m.: VKs 3AFQ, 3WI, 3YQ. 1.8 Mc. c.w.: VK3AFQ. 3.5 Mc. c.w.: W/K6-7, ZK1BW (1130z). 7 Mc. s.s.b.: ZL4JF. 7 Mc. c.w.: AP-5CP (2000z), HM4AQ, KX6AJ, JA1MHL/MM, JA2GG/MM, JA8OI/MM, KL7AUG, KG6NAA, DU6RG, HM1BI, UH8AE, VK8UX, UO5AM, XE1OK, XE2SS, VP9AX/P, ZE8JJ (1945z), 4X4NPW, 5H3HD (2045z). 14 Mc. s.s.b.: VR1N. 14 Mc. c.w.: AP2AR, BY1PK, DU1-8, HS1M, HL9KH, KH6, KC6, KJ6, KP4, KR6, OH8QJ/MM, VE8RN, VP6RG, VR1A (0730z), VR2EH, VR1N, VE1VI, VS4RB, ZK1BV. QSLs rcd.: CT1HX, DJ8IK, F8IV, G3LSR, GI4RY, HB9ADP, JA-3CUK, LZ1DA, PA0ROL, PK4DA (1946!), PY-7MP, UA2AF, UA4PX, UA9PI, UB5JO, UD6DU, VK1ACA, VK3WI (1.8 Mc.), VE3ERB, VP6RG, VQ4GT, VQ8AI, VR2EO, VS1LP, W8JJN (21 Mc.), YO9EM, YU1APV, 5B4TC, VK3AFU/M.

Ken VK3TL is handicapped with a seized-up quad antenna motor, but managed these on a dipole: 14 Mc. c.w.: YS1GM, UR2KAN, UN-1KAJ, VE0MC, ZB1CR, TG9MO. 7 Mc. c.w.: WN9EWZ. QSLs rcd.: 6O1WF, HK4EF, 5A3CJ, SL6BH, 5B4TC, ZS7R, SV1AE, GB2SM, PJ2AE, UJ8AF, UR2KAN, VR3O, HC8CA, TG9SC, ZB-1CR, and HB1ADP.

Peter L6021 heard the following. 21 Mc. a.m.: CR7GJ, DJ6PI, G2IT, G3HTN, GM3PZR, KH6EZT, W/K5-6, ZE1JE, ZE2KL, ZE6JS, ZE-8JF, ZE8JZ, ZS2OM, ZS4NO. 21 Mc. c.w.: DL3AR, G3BZU, G3DLH, JA1, K6TQA, VS1LX. 14 Mc. a.m.: DM2ALJ, FK8AU, VE7, VK4HG (Willis), VK0DM, VP5BK, VR2DI, W5-6-7, YS-1IM, YV1LA, ZE7JR, ZE8JJ, ZE8JZ, ZL3AAP, ZS1DM, ZS1MW. 14 Mc. c.w.: DJ3YS, DL9VN, DM3WZN, HI8AKU, I1AFS, I1TFF, JA4DI, KP-4AOO, KP4AQQ, LA1H, OH5UQ, SM7AVD, SP8SZ, SP9ED, UA1-3-4-9-0, UB5, UC2, UI8, UQ2, UR2, UT5, VP7NS. VS4RS, VU2MI, W4-5-6-7-9, YO9SC, YV5AKP, ZL1-4. 14 Mc. s.s.b.: CN8FX, CP1CT, CR9AH, DL4DR, G2-3, I1CWN, KX6BH, OA4OG, OK1ADP, PZ1AX, SM5BOU, SM6VR, TG9AR, UB5KKA, UL7, VE4-7, VK-6ZS/9 (Christmas Is.), VK0VK, VP5LG (Grand Turk), VR1N, W, XE1CE, ZE1JE, ZE2JA, ZS-5JM, ZS6ANE, ZS6TE. 7 Mc. a.m.: DU1-6, PY7VKN, W3, ZL3, 9M2DX, 9M2FR. 7 Mc. c.w.: CR6CY, DJ3VC, DM3MSF, DU1-6-8, HM-1BK, HM4AQ, JA1-2-3-7, KG6, KH6, KR6, LZ-1KPG, OK1MF, SM2COT, SM4BCE, UA1-3-4-9-0, UB5KBR, UL7LP, UW3EV, VP9AX/P, VP-9DL/P, VS1LS, W1-0 (incl. Novices), ZL4JF (Campbell), ZL4JP, 6O1ND. 7 Mc. s.s.b.: G3, GW3, JA1INJ, KB6BS, KC4s, KH6, VK0VK, VR1N, W1-0, ZL1ABZ (Kermadec), ZL1-2-3.

ADDRESSES

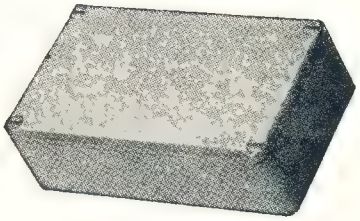
HC8CA—Via W2MES.
M1VU—Via D.A.R.C.
9N1DD—Lt. Col. W. A. Gresham, U.S. Embassy, A.P.O. 959, Box K.A.T., San Francisco, California, U.S.A.
6O1ND—W4TUA.
VS5CW—Via VS1CW, P.O. Box 777, Singapore.
HM4AQ—Via W8BF, except Oceania QSOs, which go via JA2JW.
KH6PD/KG6—Via W2VCZ.
FB8XX—Via 5R8BC.
FB8ZZ—Via 5R8BC.
LH4C—Via W4ECI.
FM7WQ—Via W4OPM.
XT2Z—Via HB9ZY.

SUMMARY

Average sunspot activity for July and August is about 22, but overseas information says that short skip conditions this spring on 10 and 15 metres will be good. This will be more advantageous to those in the Northern Hemisphere, where there is much greater activity.

My thanks again to all those who send news, particularly this month; to S.w.l. Leo Tully, whose taping of DX Bulletins proved valuable. 73, Al VK4SS.

EDDYSTONE
DIECAST BOXES



Cat. No. 845

Made of zinc alloy material, in three sizes. Each box is supplied with close-fitting flanged lid, securely held with countersunk 4BA screws. Natural finish. These substantial boxes are invaluable for many purposes and are particularly useful where a high degree of electrical screening is desirable.

Cat. No. 896:
Length 4-7/16", width 2-7/16", depth 1". **14/9** + 12½% S.T.

Cat. No. 650:
Length 4-11/16", width 3-11/16" depth 2-1/16". **20/7** + 12½% S.T.

Cat. No. 845:
Length 7-3/8", width 4-11/16", depth 2-1/16". **32/5** + 12½% S.T.

Wherever stability and screening are required, use Eddystone Diecast Boxes.

DISTRIBUTED BY—
WILLIAM WILLIS
& CO. PTY. LTD.
428 Elizabeth St., Melbourne

VHF

50 – 144 – 288 – 576 – 1296 Mc.

Sub Editor: LEN POYNTER, VK3ZGP.
14 Esther Court, Fawkner, N.15, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Greetings once again. Winter seems to have claimed its victims once again with the seasonal fall off in activities. Judging by the various reports this seasonal influence has extended to all States who have experienced a trying winter. The mid-winter 50 Mc. openings were quite good around the Eastern States with DX between VK5, VK4, VK3, VK2, VK7 and across to ZL, opening on a fortnightly basis (very convenient). A surprise here was an opening to Launceston on 23rd June, when Col VK7LZ worked VK3ZHH and myself—proved that watching t.v. pays dividends.

This coming season promises interesting results with the sunspot minima being reached early next year. Predictions are for an exceptional amount of short skip openings on 50 Mc. It might be possible to repeat 144 Mc. DX achievements of the past two seasons. It will be very interesting to see if a W.A.S. on 144 Mc. will occur here in VK—those with a number of States worked will, I'm sure, be working overtime to increase their tally. One path worth watching this year will be the VK3, VK5 to VK6 as the cycle might repeat itself this year. On 50 Mc. between VK3 and VK6 (Kalgoorlie area) should be worth watching as last season there was a number of openings across this path when no other VK6s were heard.

I am appealing once again for correspondents to augment the material from the existing Divisional scribes, particularly from Northern Qld., Broken Hill area, Northern N.S.W., Western and Eastern Victoria, in fact anywhere there is some v.h.f. activity away from the capital cities. Individual Amateurs or S.w.l.'s are most welcome sources of additional information. No matter how small, please drop me a line and let me know what's doing in your area. Only this way can we give an overall picture of v.h.f. activity in VK. Details of any special efforts to work DX on v.h.f. will receive full publicity if you will only supply the details (by the first of the month please).

VK6 v.h.f. Amateurs are to be commended for their interest in the 70 Cm. band Their Gentleman's Agreement on the division of the band for stabilised and unstabilised gear and a.t.v. could well be used by all States. We trust that all Divisions can agree on something similar. See under VK6 notes for details of same.

Would the Secretary of the Burdekin (Qld.) Club please contact me again as I have mislaid his recent letter—my apologies. Also would the VK4 scribe please forward his notes to me at the above address—not to Bill's (3ARZ) address.—VK3ZGP.

NEW SOUTH WALES

The June Fox Hunt, organised by Dick 2ZCF, turned out to be quite a comedy. Coming at a time when Sydney was having an unusual (?) amount of "wet", and being the dead of winter, a very good roll up of starters commenced the Hunt, 8 to 10 in number (couldn't see too well), and at the appointed time, with much screaming of tyres, they departed, supposedly in the direction of the Fox. First reported casualty was 2ZSS, who lost his beam. Likewise John 2ZAV who snapped the boom. Bob 2ASZ had better take a bow for his effort in organising the Long Distance Hunt, as most of the bods have been raving about it. The winners of the Wednesday night Hunt were 2ZPJ first, with 2ZIP and 2AWZ following. The Fox was holed up at a little reserve at Colo.

Transistor gear looks like getting a shot in the arm very shortly, with Les 2ZBJ and Terry 2ZBL doing some dabbling with transistor tx's, converters, rx's and the like. This was helped along by the importation of American Motorola N.P.N. silicon planar power transistors, which are now available at about 30/- each and have a collector dissipation of 3w. Les has made a contact from Camden to Horrie at Artarmon, using one of these, and Terry has made several cross-town contacts of about 15 miles with S8 to 9 reports. Les has been coerced into giving information on his converter and circuits for tx and rx will be available soon. If you can't wait, write to me and I'll try and scribble out a legible circuit for you, also sources for transistors.

Noel 2ZNS is hitting the sideband trail soon with metal work and v.f.o. already under way, also has f.m. for 2 mx coming along. Reg 2ZMR has been having a little trouble with his 146 Mc. f.m. net car phone, but when last heard was putting in a thumping big signal. David 2ZVW is "getting along with the Indians" now, with 120w. on 6 mx f.m. and is once again getting under way on a linear for 6 mx s.s.b. Incidentally, we lose Basil 2ZLB from the ranks shortly when he takes up his new post in W.A., about 600 miles from Perth. Best of luck, Basil, and let's hope there are plenty of VK6 to VK2 break-throughs for the next few years.

6 mx DX has been very patchy once again and the only opening really worth reporting is from Keith 2ZVL, who says that was an opening to ZL for about three hours on 23rd June, and shorter openings earlier in the month. Roger 2ZRH reports that VK4s and VK5s were lifting above the noise over the last couple of week-ends, but not long enough to make a contact.

I had some notes from Max 2ZMO at Raymond Terrace, but the main things are the same things—they still listen for sigs from Sydney, but never hear anyone. Next month I will give more details of doings in the Hunter area, but for the moment we're running out of space. Thanks for the info., Mac, and keep it coming.

Lastly, don't forget the new style Day Fox Hunt on 11th August, with Paul 2ZPJ as Fox and starting place to be announced. (Watch "Bulletin" for this.)

That's it for another month and keep me informed of what's going on fellas. Somebody must be interested! 73, 2ZBL.

VICTORIA

The V.h.f. Group meeting was held on 19th June at 478 Victoria Pde., East Melbourne. 3ZNJ was in the chair with some 40 persons present. The first item of business was the presentation to 3ZAA of his VHF100 Certificate; good going, Graham!

3ARZ reported that the last Fox Hunt led by 3AOG attracted five hounds and was full of "incidents' and was eventually won by 3ZJF. The Fox Hunt is held on the second Wednesday of each month, commencing on the east side of the "island" in College Crescent adjacent to the Foundling Home. New starters are most welcome. Starting time, 8 p.m.

Discussion then began on proposals to investigate some form of band planning on 2 mx and 70 Cm. 3ARZ spoke on using 144.0-144.10 Mc. as a segment for country Amateurs—by restricting its use to stations outside a 50-mile radius of Melbourne. The Sec., 3ZGP, described the R.S.G.B. 2 mx band plan, which divides the U.K. into zones, each zone using a particular segment of 2 mx and 70 Cm. Quite a few interested Amateurs spoke on the proposals and it was referred to the Investigating Committee to make firm proposals and submit them to all Amateurs.

The N.F.D. came up for discussion regarding the V.h.f. Field Day, and it was decided that the V.h.f. Field Day would cover the same hours as the N.F.D.

A talk on 3 Cm gear by 3ZGM, and 3ALZ's 1296 Mc. g.d.o. followed, concluding with refreshments.

50 Mc.: This band has been getting more than its usual share of activity with almost fortnightly DX openings and it has brought quite a number of new stations on to the band. June 23 provided quite an interesting opening to 7LZ, who worked 3ZHH and 3ZGP. Col was copying Channel 1 from Bendigo at the time. Seems t.v. has its uses after all.

144 Mc.: Although the weather has been really wintry, activity is being kept alive by the few stalwarts. 3VL at Numurkah is being worked regularly from Melbourne. 3ZER has s.s.b. going and is putting good signals from Melbourne; is running up to 50w. from a ZL linear, ex 3ZMV. It is also rumoured that 3ZL might soon follow suit on 6 and 2 mx.

VK3 6 Mx A.M. Net: Since its inception some two months ago this net has steadily expanded though availability of xtals appears to be holding many back. Some 70 odd ex mobile radiotelephones of the Reporter Mk. I. variety have been distributed through VK3 disposals and a majority of these went to the country areas complete with a 5892.5 kc. crystal for the tx. In the metropolitan area, 3ALZ, 3ZGD, 3ZGP, 3RF, 3ZFS are using modified units, while 3AIJ (converted 522) and 3KC are using normal home stations. 3AHL has s.s.b. available, plus a.m. on the frequency.

3ALZ is modifying units and has all the know how. If you require your unit to be converted, Ian can oblige for a reasonable charge. If you have any queries, contact 3ALZ (please enclose s.a.e. if writing). He has compiled an article for "A.R." which should appear soon. (Ian's home phone number is 306-7974 and the best time to call is between 5-6 p.m.) 73, 3ZGP.

SOUTH AUSTRALIA

50 Mc.: The poor level of activity on this band was relieved by an opening to VK4 on 23rd June at 1300 hrs. C.S.T. 4ZAZ, who was worked by 5ZK, 5ZBR and others, offered the information that he had been viewing Channel 2 t.v. from VK2, VK3, VK5 and VK7 all the previous week (i.e. week ending 23rd June). So it appears there may have been a few openings that we did not know of. This is more understandable when we consider that the VK5 beacon has been off the air for about one month.

Glen 5ZEE has a new mobile on 6 mx, running about 5w. to a 12BY7A. If Bob 5ZFG doesn't write that article for "A.R." on the VK5 beacon soon, I'll write the darned thing myself.

144 Mc.: Activity on this band is fairly low, the fellows seem to be concentrating on construction. Mick 5ZDR had a 2 mx tx finishing up with an 832A (equivalent) as a straight amplifier driving a QQE06/40. Mick hung a new crystal in the tx so that the 832A was being driven at 137 Mc. instead of 144 Mc. He then lifted the cathode of the 832A off earth and fed in 2 to 3 watts from a 7 Mc. "Command" tx. There is then adequate drive to the QQE06/40 from this power mixer. This hetrodyne v.f.o. is very stable and is better than many crystal signals (not that this is saying much). It is refreshing to see that Mick is no longer bothered by certain moral convictions that used to inhibit his use of v.f.o.'s two or three years ago.

General News: Probably the biggest thing this month was the Fox Hunt on 29th June. About 40 chaps in 14 cars turned up, seven cars being on 2 mx, six on 1 mx, and one car on 6 mx. The fox was transmitting on 6, 2 and 1 mx, and the hunt was on strictly a "mileage covered" basis. The outright winner was Douglas 5KK, second was 5ZK with 5ZBR/5ZHJ in third position. Alf 5LA assisted your conductor as fox.

To facilitate the dissemination of the weekly 5WI session, the V.h.f. Group is building a 144 Mc. relay tx. This rig will use a QQE06/40 p.a. and will be completely portable so that it may be used wherever the Sunday morning broadcast is being conducted. Bob 5ZDX is in charge of the project and has been very ably assisted by donations of parts from many of the local Hams.

The disposals group in VK5 is staffed predominantly by v.h.f. operators and has been doing a very good job recently. Recent purchases have permitted members to obtain 25 yard lengths of RG8U (equivalent) at 10/- a length, not to mention ceramic 9-pin sockets and 30 pF. concentric trimmers at 6d. each. More active members of the Disposals Committee include 5II, 5BQ, 5ZK, and these chaps are assisted by 5ZKC. 73, 5ZCR.

WESTERN AUSTRALIA

Winter has come to VK6, the farmers now complain we have too much rain, but luckily 24 members braved the elements to attend the June meeting of the V.h.f. Group. The major items arising were the proposed new 50 and 144 Mc. beacons and a discussion of the use of frequencies in the new 420-450 Mc. band which is reported under 420 Mc. news.

The new beacons proposed will be constructed by the Group to replace those at present in use after some many thousands of hours of service. Both the beacons will have an 815 in the final and run approx. 50w. The identification will be VK6VF impressed by f.s.k. This method enables more power and easier identification of a week signal. The constant carrier will also enable them to be used to align converters and receivers.

V.h.f. Scramble: The all-band scramble results are as follows: 6LK 73 pts., 6ZAA 63 pts., 6ZDS 62 pts., 6ZAG 33 pts. and 6ZDM 32 pts. 6MM claimed 7 pts. and won a special section for stations over 50 miles. This Scramble

showed many of our locals' shortcomings in their gear which are being rapidly rectified.

50 Mc.: Doug 6ZDW, Graham 6ZDB and Ken 6ZBT were one group who went mountain hunting. They tried sites at Mannington mill, 83 miles south of Perth, and Bunbury, 118 miles south of Perth. Quite good signals were heard at my QTH from both locations. Bill 6ZBJ has re-appeared on this band with a re-built tx using an 832A in the final. Glad to see you on again Bill. Mid-week activity lately is very slack, apparently the cold weather has made some shacks untenable.

144 Mc.: Dennis 6AW and Brian 6ZDE ran the June Fox Hunt. They found a small cave in a limestone cliff right on the river's edge near Fremantle. The signal had the appearance of coming from anywhere but the source and when 30 yards away the tone could not be picked up on a snoop loop. Tony 6ZDT and myself as co-pilot were the first of the only two teams to find the tx. Lance 6LR and Glen were second.

A solid core of 144 Mc. mobiles is being established and rather far reaching plans are afoot to increase these numbers. Narrow band f.m. is being considered as a likely standard for VK6 and availability and adaptability of t.v. components is being studied.

420 Mc.: A proposed Gentlemen's Agreement for the frequency use of this band has been submitted to the Group by Don 6HK, who worked in conjunction with several other Amateurs. The band has been divided into six segments, namely,

420 - 424.5 Mc.—Modulated oscillators.
424.5- 431.5 Mc.—Amateur T.V.
431.5- 432 Mc.—Guard Band.
432 - 436 Mc.—Xtal locked operation.
436 - 443 Mc.—Modulated oscillators.
443 - 450 Mc.—Amateur T.V.

These divisions may at first seem unnecessarily detailed, but they have been the product of some far-sighted clear thinking.

The two mod. osc. bands have been chosen to border the lower edge of the two t.v. bands as at this frequency the unwanted sideband will be extremely difficult to supress and minimum interference is planned.

The two t.v. channels will enable simultaneous two-way t.v. contact and this is not too far in the future.

The xtal locked segment is chosen as 144 Mc. can be tripled into this part of the band and is the natural choice for this type of operation.

We in VK6 hope these suggested segments will be acceptable to all States as a Gentleman's Agreement. If they are, they could become an official W.I.A. Federal policy. Please let us know the views of other Groups on this matter as these frequencies should be thrashed out before too much equipment is constructed. A firm sound policy to this band will enable exchange of ideas from State to State and any v.h.f. Amateur changing his QTH Interstate will not be loaded with useless gear.

I cannot stress the urgency of this matter too much as 1964 will be much too late to decide what we are going to do and where we are going to do it. 73, 6ZDM.

TASMANIA

The 50 meg. converter mentioned last month will be completed by the time this goes to press. The subject of lectures was brought up and it was decided that each member should take it in turn to describe his gear, so that everyone can get some ideas on improving their equipment. The lecture this month was on the types of transceivers used in light aircraft, frequencies used, and the D.C.A. communications set-up in Tasmania, delivered by yours truly.

50 Mc.: At the time of writing, no DX reported on this band. The usual gang is active with the exception of 7ZAV, whose power tranny went up in smoke for no apparent reason.

144 Mc.: Activity is still high and getting better all the time. Reg and Wilf, 7ZAO and 7ZAQ, are re-building the final in the rig to improve its efficiency. Parallel lines are to be used as the tuned circuit and a blower is to be installed to keep the old 6/40 cool. 73, 7ZAV.

Some news from 7LZ: 7BQ and self are only active stations around here on 50 Mc. and we only use it around Ross Hull times—have to be very careful with t.v.i.

On 144, it is a different story. At present there are 12 active stations around Launceston and another boy is awaiting his Z call. Some are only using low power, but the rx standard is good and beams range from 4 to 10 elements. When 7ZAI and 7ZAT were operating from Flinders Is. last April 8 of 12 had consistent contacts up to 103 miles, so it's not too bad. 7LZ, 7PF, 7BQ, 7DK, 7ZRJ, 7ZBR and 7ZRF are all at Launceston. 7ZEC at Evandale, 12 miles south of Launceston. 7RL, 7ZAH, Mt. Barrow, 4,000 ft. up; 7JF, 7ZBB, Poatina, approx. 20 miles s.w. of Launceston, 1,000 ft. up. 7ZBB is awaiting his full call. 7ZEC works into Hobart any time and is quite handy as a liaison when the band opens to VK3. At present I am unable to give frequencies as some changing around is going on and will give a list later.

7BR has almost completed his high power 144 gear and is due on any day. 7ZBH is active on 144 from Ulverstone and is in Launceston on week-ends with mobile gear.

PAPUA

Very little v.h.f. news to report once again this month. 50/144 Mc., no DX was heard during June. 49.8 and 49.9 Mc. ionospheric scatter stations were heard on seven days during the month. T.v. TNQ7 Townsville added a little variety to the rather sparse v.h.f. scene, reception being noted on 2nd, 3rd, 4th, 16th, 27th and 28th June. 9CK is a newcomer to 144 Mc. Murray has just completed a converter for this band. 73, 9AU.

☆

CALL BOOK MAGAZINES

The Federal Treasurer of the W.I.A. again has for sale at £1 post paid a few back numbers of "Call Book Magazine," the great American directory of Amateurs. These have been used by W.I.A. Federal Officers and are in first-class condition.

There are two editions: (1) United States only: (2) "Foreign" edition, that is to say, all Amateurs except Americans.

Apply to Bob Boase, VK3NI, 50 Cardigan St., Carlton, Vic.

TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

LOW DRIFT CRYSTALS

FOR

AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 and 7 Mc.
Unmounted, £2/10/0
Mounted, £3/0/0

12.5 and 14 Mc.
Fundamental Crystals, "Low Drift,"
Mounted only, £5.

THESE PRICES DO NOT INCLUDE SALES TAX.

Spot Frequency Crystals Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN
15 CLAREMONT CRES., CANTERBURY, E.7, VICTORIA

DURALUMIN, ALUMINIUM ALLOY TUBING

IDEAL FOR BEAM AERIALS AND T.V.

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS—¼" TO 3"

Price List on Request

STOCKISTS OF SHEETS—ALL SIZES AND GAUGES

GUNNERSEN ALLEN METALS PTY. LTD.

SALMON STREET, PORT MELBOURNE, VIC.
Phone: 64-3351 (10 lines)
Telegrams: "Metals," Melb.

ADELAIDE GAM MELBOURNE

HANSON ROAD, WINGFIELD, S.A.
Phone: 45-6021 (4 lines)
Telegrams: "Metals," Adel.

SWL

OH0, KL7, ZD8, ON4, LZ, FF8, VP8, XW8, 5H3, W0

Sub Editor: J. M. (Mac) HILLIARD, WIA-L3074
57 Gardenia Street, Blackburn, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Hi there fellow twisters, here we are again with you. With the advent of the cold winter days, it does not inspire one to go out to the shack. That is if your shack is not in the house. So it may afford you the opportunity of getting your equipment ready for the forthcoming R.D. Contest. While on the subject of the R.D., make sure that you are quite conversant with the rules. There will be a few newcomers to the Contest this year and we would hate to hear that you had been disqualified because you had not read the rules properly. Best of luck to all of you in the Contest. Now what State is going to challenge VK3 this year?

As your scribe will be on holidays during the latter portion of August, I would appreciate it if you could let me have all correspondence by 16th of August. Any letters received after that date will have to be held over until the following month.

How many of you listen to the Voice of America's "Radio Amateur's Note Book"? This session can be heard every Sunday at 6.45 p.m. E.A.S.T. Sorry I can't give you the exact frequency, but have found that their transmission in the 31 mx band to be best at the present time. Many interesting interviews and talks can be heard on this programme, which is conducted by Bill Leonard, W2SKE.

Several years ago a Contest for S.w.l.'s in VK was organised and on acceptance from F.E., all S.w.l. Groups were circularised on the details, but to the best of my knowledge not one Group notified us on what they thought about it. And until such time as more interest is shown by members generally, we will certainly not waste our time and effort on such projects. I know that we have more S.w.l.'s in VK than is generally known, and it is from you silent types that we want to hear, as well as the few regulars. So how about it chaps, let us see if we can't all make the S.w.l. Groups into something really worthwhile.

All DXers will be interested to learn that there will soon be activity from ZD7. ZD7BW hopes to be going on s.s.b. by 7th August. There is also a good chance that ZD7SE will also be on the air. G3PEU will be on St. Helena for some two years, so don't despair if you can't hear him at first.

VICTORIA

Several years ago we submitted two awards to Council. They were the DXCC award for confirmation on having confirmed 100 countries, and the Heard All VK award. However, we would like to know if the award certificates are on hand at the present time.

At the last meeting of the Group, an illustrated tape lecture was presented. This lecture proved very popular with the members. The tape was one made available by courtesy of the VK2 Division. There were 23 members at the meeting, and our President Maurie also gave a short talk on s.s.b.

Noel L3101 has been unable to pay any attention to the bands for some time, due to health and personal reasons. Very sorry to learn of your news Noel, and do hope that you will soon enjoy better health and will be able to again soon take an active part in our hobby. Recently Noel received a certificate from "Popular Electronics".

Richard Mills, of New York, is very keen to become a member of the W.I.A. He has already made moves to join. Well Richard, you will be most welcome to this page.

Ron L3076 recently purchased himself a grid dip oscillator and has been having fun and games getting his v.h.f. converters on the nose. But he has found that he is not getting enough injection from the 144 Mc. oscillator and as a result he has had to make a few modifications. Hope you don't end up on 72 Mc. Ron, but with that g.d.o. you should be OK.

Maurie L3055 has been very busy with studies and home chores of late. With the addition of an harmonic (YL) to the family, Maurie has found very little time to chase DX. Your scribe has had the odd listen on the bands and recently erected a 21 Mc. dipole but has found that it was no better than the 14 Mc. beam. Greg L3138 is hearing plenty of DX on his recently-erected rotatable dipole. Bad luck the photo was not so good, Greg, better have another try some time. Had a phone call from Michael L3133 a while back. Michael is using a No. 11 rx at the moment as he loaned his other rx to his YL, whom we hope may become an active S.w.l. Mike is on the look out for a 14 Mc. converter.

There are several cards in at the QSL Bureau for L3138 and L3141, so if those members would be kind enough to forward a stamp addressed envelope to the QSL Manager (Eric Trebilcock) your QSLs will be sent on to you. There is also a card for a non-member whose surname is Mackenzie.

Eric L3042 received 102 QSL cards during the month of May, but bemoans the fact that there were not many new ones amongst them. Well Eric, I am sure that most of us would fall over if we ever received that many in a month. At present Eric has been observing conditions on 160 metres. Like most of us, Eric is looking forward to the R.D. Contest and he strongly urges you to make sure that you get your logs in early.

NEW SOUTH WALES

Chas. L2211 has not been very active of recent weeks due to a number of reasons, and at the moment he is having a rest from S.w.l'ing. But no doubt Chas will be back into things when we get into the warmer months. Don L2022 is at the moment spending some leave up in VK4. Have a good holiday old son, and no doubt the rest from radio will also do you a power of good.

WESTERN AUSTRALIA

Our good friend, Peter L6021 has been busy on the bands as usual, and he is rapidly rising on the DX Ladder. This month Peter has spent more time on 14 Mc. That's a change for you, not a bad band is it? Recently he erected a 7 Mc. folded dipole and has found an improvement. Peter mentions that 7 Mc. has been very good to W land of a morning. On 14 Mc., he has been hearing numerous ZS and ZE sigs. Wish you would pass a few over this way, we do hear some of them. Peter still listens to many of the novices in W land. Thanks for your interesting letter, Peter, and good luck in the R.D. Contest.

GENERAL

Most of the Groups seem to be rather inactive. How about you all proving me wrong? The R.D. always gives us an indication of the activity, although we are aware that there are many S.w.l.'s that are not interested in it.

We would like to provide you with more news, but that is up to you to provide the news. See you in the "R.D." 73, Mac.

DX LADDER

	Countries		Zns.	S.s.b.		W
	Conf.	Hrd.	Conf.	Conf.	Hrd.	Stat.
E. Trebilcock	281	289	40	—	—	50
D. Grantley	113	259	38	20	104	35
A. Westcott	93	159	31	9	107	11
H. Hilliard	76	229	33	24	158	11
M. Cox	72	223	29	39	150	18
P. Drew	62	199	27	27	117	13
N. Harrison	44	119	29	4	20	35
I. Thomas	41	139	20	16	97	14
G. Earl	10	108	8	2	82	—
D. Coggin	10	92	7	3	60	14

YOUTH RADIO CLUBS

With a sigh, I must report that, as far as I can find out, Port Pirie is still the civilised capital of South Australia—it has an Amateur body with a conscience about its youthful citizens and it has some thoughts about the future of Amateur Radio. For the sake of anybody outside my usual circle of readers (all four of them!) who stumbles on this section by accident, I will state the facts causing these remarks.

The Y.R.C. scheme has two obvious points at least—it must do a great deal of good for the youth of this country (are you **sure** we won't get the wave of juvenile delinquency from other countries?) and it must make the position of Amateur Radio much stronger in the quickest way. Federal Executive backs this viewpoint. To all Divisions, except VK5, this makes good sense and, despite the voluntary nature of our administration, an Amateur has been found to be Co-ordinator in all other Divisions and the Divisions have given some backing on the lines I recently summarised.

For instance, with solid backing in VK2, over 40 Y.R.C.'s are active in N.S.W. and the numbers are steadily climbing. We must continue to hope that at least one public-spirited Amateur with just a little time and some interest in Youth can be found in Adelaide to co-ordinate these actiivties in that State, give the few struggling Club Leaders the Divisional help they need, and encourage potential Club Leaders who see the present handicaps. If one Co-ordinator is not there, why not a committee?

As forecast last month to my aforesaid four readers, I'd like to try an experiment—a daring one in these days when everyone expects 64,000 Royals for answering any question or writing 25 words of slop about somebody's soap. There is a need for a well-designed portable exhibition unit to take to schools, fetes, shows, exhibitions, etc., for the purpose of interesting young visitors and creating good public relations in general. I propose a competition with only satisfaction as a prize. Would anybody be interested to design an arrangement of display units of literature, constructional work, Amateur station, intriguing demonstrations, etc., for the above purpose? The complete array should be portable in two or three cars at the most. I'll be of what assistance I can, but I suggest an article, finally, in "A.R." by the designer.

News is still very scarce from VK4 and VK6. How about it? I have heard of one half-witted Headmaster in Queensland who brushed off the Y.R.C. idea, but I can assure you his type is not common. All high schools are fertile fields.

Did you VK3s see "The Age" of June 6? You surely saw the four-column photo of the leaders of Eighth Footscray Scout Troop at their transmitter, 3AEF. Scout Master Les Marmo and brother John have both been through Canberra recently and were good enough to call in, so I had the news direct from Footscray. Bill 3AHT is licensee, operator and instructor, and Bert 3ZGD lent the gear. Amongst other things, they have been most ingenious. They have **two** neighbouring Mayors of Sunshine and Footscray as patrons!

Recent additions in VK2 are at Hurstville Technical College and Cranbrook School (both in Sydney, in case you can't find them on a road map). I am looking forward to getting some details from Hurstville T.C. Secretary, but Brian Burton (ex-1KK, now 2AUN) writes from Cranbook. "The Headmaster was deadkeen for me to start a Y.R.C. I have already had my first meeting and we are on the way. About 60 boys wanted to join, but we cut it down to 20 for a start. We are working in a beautiful new science block and will very soon apply for a licence." This sounds great stuff, Brian. I know you'll enjoy it, and I hope all the other G.P.S. becomes envious. You can show them what they are missing!

Here in Canberra, the word still spreads. The fanatics from Lyneham High, led by George 1GB, put on a show at the Police Boys' Club to publicise the start of a new radio course there under Mr. V. Sabanskis. The "Canberra Times," like any other newspaper, respects our news value and printed a report and a prominent photo. You club leaders should remember that all publicity helps—as long as you're on the right side of it. In addition, a new group met at Dickson High and should be active soon. That makes three high schools, Police Boys' Club, and Canberra Radio Society all doing something. One anxious group of 20 is stranded at Narrabundah High without a leader. I'm hoping they'll be the fourth high school some day soon.

P.S. for PS—Please don't have so many of your flock counted twice or three times. Surely you couldn't have 120 at a meeting in the City of Churches and then nothing happens about Youth Radio Clubs! 73, 1KM.

DEPARTMENT OF EXTERNAL AFFAIRS
ANTARCTIC DIVISION

RADIO OPERATORS WANTED

at Macquarie Island, Wilkes, Mawson and Davis

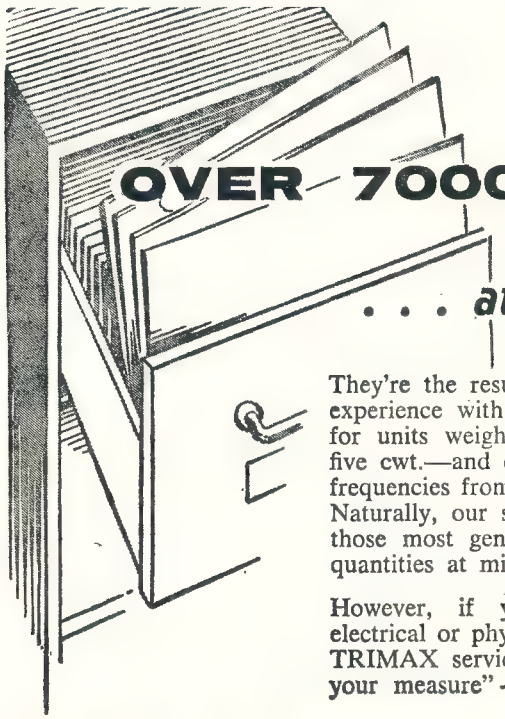
SALARY PER ANNUM: £1,084 to £1,237

Qualifications: Commercial Operator's Certificate of Proficiency or equivalent service experience, together with experience in operation and maintenance of ground installations.

CONDITIONS OF EMPLOYMENT: Two to four months preparatory work in Melbourne followed by approximately twelve months at the Station. Tentative sailing dates: Macquarie Island—early December, 1963; Mawson, Davis and Wilkes—late December, 1963. Whilst absent from Australia, kitting and maintenance are provided free by the Commonwealth, and there is an allowance of 37½% of salary up to a maximum of £575 per annum. In addition to which a district allowance of £325 per annum for married men, and £200 per annum for single men is paid. Recreation leave accrues at rate of five weeks per annum. Subject to the provisions of the Income Tax Assessment Act, Zone Allowance deduction of £270 may be allowable. Salaries commence within the appropriate range according to qualifications and experience. Employment will be in a temporary capacity under the Public Service Act 1922-1960.

Applicants must be in robust health and have experience in outdoor life such as ski-ing, mountaineering, bush-walking, etc. Applications must be accompanied by a recent photograph and should be forwarded to:—

The Director, Antarctic Division, Department of External Affairs, 568 St. Kilda Rd., Melbourne, S.C.3.

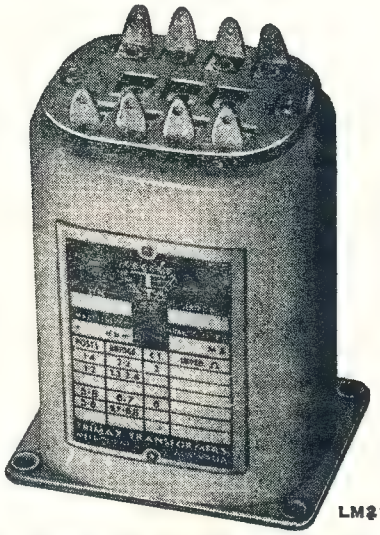


OVER 7000 DESIGNS ON FILE

. . . at your service!

They're the result of more than 20 years' experience with Transformers and Chokes for units weighing from an ounce up to five cwt.—and embrace the whole field of frequencies from 0.5 c/s to 1,000,000 c/s. Naturally, our standard range is based on those most generally used, enabling large quantities at minimum production costs.

However, if your specifications, either electrical or physical, call for special units, TRIMAX service ensures one "tailored to your measure"—just ask us . . .



LM21

L M ERICSSON PTY. LTD.
TRIMAX DIVISION
FACTORY — CNR. WILLIAMS RD. & CHARLES STREET, NORTH COBURG, VIC. PHONE 35 1203.

FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

F.E. MEETING, 3/7/63

General Business: Two members brought the matter of the possession of a heterodyne frequency meter as a condition of issuance of a full licence to the attention of the meeting, and as a result of discussion it was decided to determine exactly what equipment apart from a heterodyne meter was acceptable, it being pointed out in discussion that some approved types of wavemeters are inferior in accuracy to methods apparently unacceptable to the Department.

It was reported that the draft minutes of the Federal Convention were now complete and would be distributed as soon as possible.

It was also reported that due to difficulties with the Indian Government regulations, it had proved so far impossible to deliver the valves collected for Indian Amateurs. It was decided to approach the problem again, the period of elapsed time being considerable.

Executive viewed with concern the deletion of Federal matter from the published notes. It was pointed out that the publishing of a PRECIS of F.E. minutes was the subject of a directive by Federal Council at the last Convention. It was directed that the Editor of "A.R." be consulted on the matter.

Other matters of importance were discussed, but unfortunately, due to their presently confidential nature, details cannot be disclosed at this time.

VK3WIA BROADCASTS

It is intended that regular broadcasts from this station should commence within a month. It is intended that the transmissions should include items of a nature not usually covered by State Broadcasts—Federal News, High Speed Morse Transmissions, Technical Lecturettes, and any other material having a national interest.

It is also proposed that the station will be open for normal contacts wherein members can have direct contact with Federal Executive, as well as being employed in regular communication with members of Federal Council.

CHRISTMAS ISLAND RADIO CLUB

The following letter was recently received from the Secretary of the C.I.R.C., and was considered to be of such interest as to be worth publishing in full, as follows:—

Secretary, W.I.A.,
Dear OM,

We of Christmas Island, Indian Ocean, consider 6th May to be an important date for all Islanders interested in Amateur Radio as it marks the inauguration of the Christmas Island Amateur Radio Club. A copy of our constitution is enclosed herewith.

You will be interested to hear that we already have approx. 40 enthusiastic members of all races, Indian, Chinese, Malay and European and that the traditional spirit of Amateur Radio prevails.

The Club has been prompted by Don Reed, VK9DR, who now holds the post of Publicity Officer in our Club. Don is a member of the VK4 Division. Don has been in correspondence with Rex Black, VK2YA, and has received from Rex considerable information regarding the Youth Radio Clubs of Australia. He has also received much assistance from the VK4 Division through Peter Brown, VK4PJ (Hon. Sec.), and from Ken Long, VK4VM. Alan Shawsmith, VK4SS, has written to us for DX news.

Our Committee has decided to adopt the Youth Radio Clubs progressive examination grading system, namely, elementary, junior, senior and advanced senior, and we have asked VK2YA to arrange despatch of the first batch of certificates. We are awaiting instruction papers promised by the VK4 Division and hope to receive these shortly to assist our lecturers.

Affiliation is sought with W.I.A. as per our constitution and we would be pleased to receive information and the necessary documents to enable this matter to be finalised. Individual members will be encouraged to join the W.I.A. Please send application forms.

Through the courtesy of the British Phosphate Commissioners we have the use of a very fine Ham Radio shack, complete with lecture room, operating room and workshop. We have all instructional facilities including a recorder and an epidioscope.

We would very much appreciate receiving any instructional tapes available (these can be dubbed and returned promptly). Also any back copies of "A.R.," "R. & H.," "CQ," "QST," Handbooks, etc. for our library.

Usable junk, surplus disposals gear of any type and description, which some W.I.A. member may care to send to the Club would help us immensely as there is practically nothing available on the Island. The B.P.C. will send any items freight free to Christmas Island if delivered to their receiving depots in each State. Shipping contact, however, is more regular from Melbourne and Fremantle.

Our lads are very keen and we trust that the Club's efforts will be the means of guiding many an Asian lad into a useful electronic occupation apart from his interest in Ham Radio.

QSL Officer, Ron Ashley, will see that QSL is 100 per cent. through the Bureaux. Although VK9DR is the only licensed Amateur on our roll at present, it is probable that we will have more active Hams in the near future.

Appropriate publicity in "A.R." would be appreciated and we trust that QSL cards from Christmas Island will appear shortly in many a DX hound's shack.

(Sgd.) T. L. Menon, Hon. Secretary.

— . . . —

FEDERAL QSL BUREAU

As from 28th June the new address of the A.R.R.L. is 225 Main Street, Newington 11, Conn., U.S.A.

The R.S.G.B. 7 Mc. DX Contest is to be held on Oct. 19/20 and Nov. 2/3, 1963, the times being 0001 G.M.T. to 2359 G.M.T. in each instance. The first period is for phone and the second period for c.w. The Contest is between British Isles stations and overseas stations only. Further details from this Bureau and logs to be sent to R.S.G.B. not later than 25th November.

The R.S.G.B. staged its Golden Jubilee celebrations in London between 1st and 5th July.

The DX-pedition to PY0 (Trinidade), due to have been in operation in July, did not take place. Trinidade is a military installation of the Brazilian Government and PY4AS could not obtain permission to work from that location.

Claim forms for the Okinawa Awards sponsored by the KR6 Radio Club may be obtained from this Bureau.

Due to increasing costs, the Radio Sports Federation of the U.S.S.R. has announced the following charges for its Awards: R150S, R100O and W100U Awards—14 I.R.C. R151R, R10R, R6K and Kosmos Award—10 I.R.C. All applications to Box 88, Moscow, U.S.S.R.

Phillipine Amateurs have formed a society known as Phillipines Amateur Radio League (P.A.R.L.) with address at 67 Espana Extension Street, Quezon City, Phillipines. The QSL Bureau address is the same as above.

The R.S.G.B. advises that it has no connection with a body called the Radio Club of Scotland and all cards for GM should continue to be sent through the R.S.G.B. Bureau, Bromley, Kent, England.

—Ray Jones, VK3RJ, Manager.

— . . . —

NEW SOUTH WALES

HUNTER BRANCH

The last notes did not include a report of the June meeting of the Branch, so both June and July meetings will be reported this month. At the June meeting, the President, Les 2RJ, was laid up with the 'flu and yours truly took the chair. Because of this, the business section of the meeting was very short and the rest of the available time was taken by the lecturers. Neil 2ZCU chose as his subject "Audio for Your Transmitter" and after displaying a particularly neat piece of equipment, described how it was possible to compensate for various audio sources' deficiencies and put out a clean audio signal. Ian 2ZIF then described his efficiency method of modulation, enabling 100w. to be run mobile to a 6/40. Again a well built sample of gear was shown and both lecturers are to be complimented on their thorough treatment of the subject and the well made rigs.

At the July meeting there were again two lecturers who spoke about the design and conversion of the radiophone tx-rx units for use on 2 and 6 mx. Those responsible were Wayne Murray and Bill 2ZCV. Again these were very practical talks and each lecturer was able to answer questions about the finer points of the inside bits. Then began a film show. Frank 2APO supplied the films and Rodney 2CN showed them to the fifty present in room 15. Yes, that's fifty—a remarkable roll-up again. The first two films were pretty routine technical stuff presented in a non technical way and the third film was a cartoon. This was really an uproarious end to a good evening and following a vote of thanks moved by Chris 2PZ, we all clapped loudly and went home.

Probably the most remarkable piece of news this month concerns Frank 2FC who was actually heard on the air! As it was in reply to the Monday broadcast, we hope that Frank will continue to call and even shame some of those other seldom-heard calls to come on as well. Leo 2QB is a regular attender at the meetings, but that story about blown fuses preventing the r.f. from getting started, can't still be true, so what about it Leo and Harold and Harry and lots more—let's hear you!

Jim 2AHT has the new exciter for s.s.b. so I am told and works everyone with the greatest of ease, even though one of the reflectors has fallen off the beam. "It's all this windy weather," says Jim. "It's all that r.f.," say we. The apparent uselessness of 40 as a band for local contacts at night has caused Bill 2XT to go on 80 mobile, and even without a proper whip a good signal is heard. 2AYL is also busy with mobile gear, but no electronics are involved—it's the Jaguar.

Quite a lot of thought of late has been given to Amateur t.v. and among those known to be interested are David 2ZXA, Rodney 2CN and Les 2RJ. Whether the interest is in transmission or reception is not known, but Les at least is attending the Tech. to learn some more.

Because of the Jaguar, Stan has enlisted the aid of Mac 2ZMO with the QSL Bureau. This, Mac does in his spare time, when he's not converting 522s or letting off crackers. Stuart 2AYF is busy with some s.s.b. gear, nevertheless should be putting out his d.c. bands signal soon. Varley 2SF is active on 7 megs. and has a solid signal on that band.

One of these nights soon we'll have some of the boys giving lectures at the meeting, the following being the programme: "On Forty—Quick," by Sherwood; "My All-Band Fence," by Bruce Morley; "DX-pedition to Stockton," by Les Payne, and "How to Copy 80 Metres with No Antenna," by an anonymous Marmong resident.

In the far wastes of Wallsend or Cardiff, or wherever it is, John 2ZJG has found enough time between night service calls to build a new shack so that he can get on high power and work some 144 Dog X-Ray out by the R.S.P.C.A.'s establishment. Also among the DX is Tony 2ZCT since he put up the new beam and Des 2ZDN is having particular success with the mobile on 2 mx. Kev 2ZKW now has a crystal converter for 2 and Bill 2ZWM has cured the modulator troubles on the Minitran. Len 2ZFD and Charlie, whose call I cannot remember, are both busy and should soon be on 144. Ernie 2FP may have success sooner than he expected as 28 Mc. has been suggested as the cross-town band in G land and there's no reason why it should not be the same here.

So that's about it for another month, but you won't forget to be at the Hunter Branch meeting on Friday, 2nd August, will you? It will be as usual in Room 15, classroom block at the University College and in response to popular demand will be another "Do It Yourself" night with members displaying and describing their own gear. This is a warmup for the October meeting which will be similar but with prizes for the best lecture. And to keep up with the latest news, listen to VK-2AWX on Mondays at 7 p.m. E.S.T. for the Hunter Branch Broadcast, and please call in, whether on a.m., s.s.b., or c.w. 73, 2AKX.

BLUE MOUNTAINS SECTION

Due to his working location being changed, Ron 2ADA has had to relinquish his position as publicity officer for the Blue Mountains Section. Yours truly (Noel 2ZNS) was elected to this position. I would like to thank Ron for the help he gave me personally and also for the notes which appear in "A.R." I only hope I can keep up the good work. Ron has been moved to Cooma by his firm.

There has been some rare activity in the Section. Rare! Yes, that's correct. Where are the two metre stations? We have on our records 21 stations who can operate on 2 mx. Apart from 2QA, 2MZ, 2AVN, 2ADA, 2ZFB, 2AWW, 2ASZ and yours truly, 2 mx operation in the Section has been nil. I did hear that John 2NC had to put his 2 mx rig on the shelf to make room for construction of his sideband rig. John, how about putting the sideband rig on the shelf and come back on 2 mx?

Yours truly is about to start construction of a sideband rig for 6 and 2 mx, with high power finals to follow. So please sharpen up your b.f.o., get out your pieces of wet string, and listen for 2ZNS on sideband.

Our Section now has what I consider must be a record. All the members of this Section are now licensed Amateurs. The latest addition is Derick Boyd, who has passed the exam. and is now waiting for his call sign. Congrats. Derick. When are we going to hear you on 2 mx?

At our last meeting held at Lawson on 21st June, there was a tape lecture by Frank 2QL. The subject was "Where do my signals go?" This lecture was to have been presented at the May meeting, but due to there being no tape recorder, it had to be held over until the June meeting. The June meeting was well attended, some 15 members and two tape recorders being present. The tape lecture was to have been illustrated by slides. What! no projector? Thanks to Arie 2AVA, who did a mighty job on the blackboard, sketching details that were on the slides.

Bob 2ASZ is preparing for his change in location to Blaxland. It appears as though he is going to move the shack first and build the house later. Bob is considering 10,000 Mc. from his location at Blaxland and should have a lot of success. He is going to erect a 50 ft. windmill tower on which he can mount his antennae.

Dennis 2AWW is also getting ready for 10,000 Mc. to keep Bob happy. Dennis is preparing for Amateur t.v. when 432 Mc. comes into operation. He hopes to be operating with equipment no longer required by the firm he toils for. Lots of luck with this project, Dennis.

If there is an Amateur in this Section who can construct converters that will work and keep working, I think Al 2ZFB might like to see you. Al has been having trouble with converters that will not operate as they should.

Norm 2QA has been busy with the crossing of the Blue Mountains Sesqui Centenary. This has not left Norm much time for operating 2 mx. Norm reported to me that the Sesqui Centenary was a great success. 73, 2ZNS.

— . . . —

VICTORIA

JUNE COUNCIL MEETING

Time being short, these notes will be likewise. Apart from routine matters, Council had little to discuss. A proposal that this Division publish a monthly or bi-monthly news letter was considered, and it was decided that, provided the manpower for this project could be found, a newsletter could be a good thing. It could cover details of meetings, disposal hand outs, etc., in fact anything of interest to the VK3 Division. It would **not** be available for technical articles acceptable for publication in "A.R."

A Public Relations Officer is still being sought and the President has this matter in hand.

The equipment officer reported on tests with 160 mx equipment at 3WI. As a result it was decided that this additional band would be brought into service, as soon as the equipment can be constructed.

Only seven names were submitted for membership, of which five were associates. This is not as high as previous months, but still a move in the right direction.

The W.I.C.E.N. co-ordinator reported on his attempts to obtain suitable insurance cover for members engaged in actual emergency operations, or approved W.I.C.E.N. exercises. He detailed the proposals so far made, and Council authorised him to arrange a policy on the basis of the best offer received. More details will be available after the cover is finalised.

The V.h.f. Group is a little unhappy with some aspects of the Division. The Management Committee was invited to discuss their problems with Council, which they did. They will report back to their Group and in the meantime Council is acting on those of their grievances which are considered justifiable, and will report to the Management Committee later.

WESTERN ZONE

By the time these notes appear in print the Remembrance Day Contest will be very close at hand, so will wish every contestant the very best of luck and hope a number of our zone members will participate as in former years.

It is also only a few weeks until the Zone Convention, so we will have to get our heads together very shortly to arrange where it is to be held and what form it is to take.

Herb 3NN, Wilson 3AFU and Bob 3ARM have gear on 1.8 Mc. and are looking for contacts on that band. Keep listening and working chaps as I have heard there are ZLs, VK2s and VK5s listening for your signals. Merv 3AFO recently had some young stalwarts arrive to help him erect a new tower, but the clothes line occupied the place where he wanted to put it. It was suggested he do away with the clothes line and invest in a drying cabinet for the XYL, but he did not comment on the idea.

Bill 3AKW's signal has improved out of sight with the erection of a new half wave antenna, and with the 10-12 watts he can hold his own with the high power rigs in the zone hook-up. Herb 3NN and son, Garry 3ZOS, at Yanac, always seem to be doing something. Recently they became the proud owners of a Hallicrafters SX11 rx and are very pleased with it. They have also fitted a new mike to the modulation system and have a good quality signal, not that it was bad before.

Chas VR1B (ex-VK3IB), Tarawa, Gilbert Islands, will not have had time to get his rig on the air as yet, but hope to contact him on 14 Mc. c.w., a.m. or s.s.b. before long. Vic 3AEQ, having renovated his shack, is now in the process of building a table-top rig, as is your scribe, Bert 3EF. Bob 3ARM, Roy 3AOS, Wilson 3AFU and Trev. 3ATR are amongst the regulars on 3650 Kc. at 2000 hrs. on Wednesdays. As for the others, what they are doing I do not know. Because of not making their appearance now and again, it makes the writing of these notes very difficult.

Stop Press: By the time these notes are printed, Trev. 3ATR and XYL will be on the high seas cruising around some of the islands in the Pacific, taking in ZL1, FO8 and ZK1, and as it is his turn to pen a few notes shortly, we hope to have a full report on the trip. 73, 3EF.

NORTH EASTERN ZONE

3ACD reports having kept regular skeds with 3AHO, who is on a DX-pedition, firstly to Ocean Is. and at time of writing is at Nauru. Operating up to 10 hours a day, Bill has made between 5 and 6 thousand contacts. He took a brief spell on Tarawa Atoll to recuperate. It is expected that he would have left for home on 18th July.

3APF reported to be making a transistorised re-counter. 3VL has returned home following a recent spell in hospital. Also on the sick list was 3ALF who went down with appendicitis. Whilst convalescing, Jan has variously worked on an aerial tuner, s.w.r. indicator, and on account of intention to go s.s.b., has fabricated cabinet and chassis to house the s.b. unit. It is going to be a mobile with 6146 p.a. Jan is looking around for a windmill tower, meanwhile the folded dipole having proved unsatisfactory, he is going to re-erect the G5RV. 3AUL has been on the sick list for a few weeks and was missed from the bands. He reports that Trevor Thompson, of Yarrawonga, passed the theory and regs and is now waiting a call. Arthur otherwise is deeply involved with the Scout movement as a Group Scoutmaster. Gets mighty cold in them thar Smoko hills and our chicken wears longuns to cover his knobby knees.

3AVT building new home; figures there may be a possibility of using a spare room for a shack. Vincent has agreed to be nominated for W.I.A. membership. Following an intense

BRIGHT STAR CRYSTALS

FOR ACCURACY, STABILITY, ACTIVITY AND OUTPUT

Our Crystals cover all types and frequencies in common use and include overtone, plated and vacuum mounted. Holders include the following: DC11, FT243, HC-6U, CRA, B7G, Octal, HC-18U.

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:—
6280, 4095, 4535, 2760, 2524 Kc.

5.500 Kc. T.V. Sweep Generator Crystals, £3/12/6.
100 Kc. and 1000 Kc. Frequency Standard, £8/10/0 plus 12½% Sales Tax.

Immediate delivery on all above types.

AUDIO AND ULTRASONIC CRYSTALS—Prices on application.

455 Kc. Filter Crystals, vacuum mounted, £6/10/0 each plus 12½% Sales Tax.

ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% £3/12/6, 0.01% £3/15/6. plus 12½% Sales Tax.
Amateur—from £3 each, plus 12½% Sales Tax.
Regrinds £1/10/-.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you.

New Zealand Representatives: Messrs. Carrel & Carrel, Box 2102, Auckland.
Contractors to Federal and State Government Departments.

BRIGHT STAR RADIO

46 Eastgate Street, Oakleigh, S.E.12, Vic. Phone: 57-6387

With the co-operation of our overseas associates our crystal manufacturing methods are the latest.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

lobbying campaign around Shepparton, 15 active and dormant Amateurs have agreed to meet on 12th July to discuss further the possible formation of a Y.R.C. With this number of potential adult instructors, we anticipate evolving a roster of three per club meet, meaning only one meeting per month per head.

Some of the zone notes contain a smatter of good-natured banter (refer digs at 5PS, for example) and this makes easy the digestion of normally stereotype reporting. Arthur (not of M.A.D. fame) informs me that my comments re Kinnear Trophy damage, caused consternation amongst the previous holders. If my feeble efforts to emulate the aged experts were unsuccessful, I beg forgiveness. 73, 3ASY.

SOUTH WESTERN ZONE

Gordon 3AGV, of Colac, has had a two-way QSO with Bill 3XE of Hexham on 144 Mc. Bill 3WK of Wangoom, has been working on modulator. John 3HW and Stan 3SE are to be the proud owners of very nice s.s.b. rig from the States. Ted 3PS is back on the job again and is known for his c.w. John 3AGD came on recently on Thursday night's zone hook-up. Keep it up, John. 3AKR not heard, what about coming on Thursday nights. 3NA is back on after a long silence.

Harry 3XI hopes to go portable and mobile shortly to VK5, so keep your ears open. Norm 3EQ hopes to be back on the air shortly, maybe on 40 mx. Bill 3WK is the specialist on concrete foundations for masts. The zone station, 3ASZ, hopes to be very active from now on with Scout Jamboree of the Air later in year. Also 3XI is hopeful of going portable to the local Scout camp when the Jamboree is on. 73 Bill Wines.

MOORABBIN & DISTRICT RADIO CLUB

Activities for the Club this last month have been such as to leave members a trifle exhausted. On Friday, 5th July, we held an auction night, where bargains galore were obtained. Many of our younger members were seen after the sale carrying off their goodies.

The July monthly meeting was followed by a W.I.A. taped lecture on baluns. The tape, together with accompanying slides, provided a most informative evening.

On Saturday, 27th July, members of the Club were treated to a most enjoyable social evening held at the home of Wally 3AHZ. Noticed the XYLs getting together for a good old session too. Don't blame them either. Blimey, you should hear the way the OMs carry on about the XEs, etc., that got away. Drive any gal fair up the wall.

Congratulations to Ken 3ZNJ who has received his certificate for the last Ross Hull, being top scorer in VK3. Congrats. are also in order for Andy 3ZAK who has just received his call. They tell me he has just finished his rx and will soon be appearing on 2 mx with a complete "home-brew" station. Jolly good show Andy.

Noticed that Harold 3AFQ is now on 160 mx with carrier control, running 35w. to a base loaded quarter wave vertical. He also has his 2 mx clover-leaf strung up under the rafters in his shack and can be "heard" on the band running 18w. to a 522. What happened to "Home Brew" Harold? Lindsay 3ZNS has re-appeared on 2 mx, apparently having temporarily recovered from his attack of YLI. How long for Lins? And fancy, a 6 mx converter!

The club is considering starting a net on 2 mx a.m. somewhere above 145 Mc. Maybe this is the reason for the rumours about Peters 3XK and 3APD coming on to the band soon. Ken 3ACS seems to be getting a lot of fun out of being control station. Three times in a row; wonderful!

V.h.f. members have been active in the s.h.f. bands doing some very interesting experiments. Keep at it fellas! Peter 3ZPC is madly preparing for a 2 mx DX-pedition to VK4 in the coming holidays. Have fun Peter. David 3ZOP is busily constructing a high power final for his Channel O t.v.i. producer. Yours truly (Bob) is again active on 2 mx after an absence of some weeks. Who muttered something about "Zero Radiating Dipole"? Alf 3LC is also to be heard on 2 mx after many moons of absence. Welcome back Alf.

Don't forget the mid-year natter party to be held on 2nd August and also bear in mind the next general meeting on the 16th. Information regarding Club activities can be obtained from Harold (our Secretary you know) 3AFQ. 73, 3ZRD.

— · · · —

QUEENSLAND

TOWNSVILLE AND DISTRICT

I must thank Bert 4LB for sending in the last month's notes for me as I was flat on my back in hospital, recovering from the operation. Glad to report that I am almost 100 per cent. again and will be back again at work long ere these notes are read.

Conditions still are waning with the result that the locals are not on the bands very much. That makes it very hard to find news to keep the notes going. Sorry to report that Claude 4UX is going to relinquish the sub-editorship for the VK4 Division. It seems that the Sunshine State finds it very hard to interest anyone in performing this task. No doubt each one has found it hard to get the doings on what the boys are doing as all the correspondents seem to fall by the wayside as the enthusiasm wanes after a while.

It seems that at long last the years have caught up with our old friend, Arthur 4FE, who retires at the end of August for a well earned rest and will be leaving Normanton early in September for a spot of leave before taking up residence in the big smoke. Now Arthur will be able to do all that DXing he wants to do. Ted 4EJ surprised the gang the other night as he went QRT for the evening meal as soon as the XYL called. He must have seen the light at last. What did the Five Dock boy say?

Bert 4LB is having strife with the tx, cannot hold the final current to the stipulated level as the circuit says. Charlie 4BQ still holds the fort on the Kookaburra Session; must be his aerial system as I find it hard to copy them. Allen 4BE and John 4DD still pop up on the air to exchange reports on the doings of the band. Since the bottom fell out of the thermometer during last week, the noise level has increased out of all proportion and only very good signals can override same. No news from the Cairns boys so had better pay them a visit again and find out why no reports. Don't forget you locals, the Scouts promise to roll up this year for the Jamboree. Forget about what happened last year and help out this time. 73, 4RW.

WIDE BAY AND BURNETT BRANCH

Frank 4FN, of the Central Qld. Branch, passed through our territory recently, driving his 85 Holden horses like Father Neptune on a visit up to the city, and a little later as he journeyed home in triumph, one of the enemy drove past him in great haste in his chariot and flung a thunderbolt at him, and so Frank drove home the rest of the way without a windscreen and cold ears.

I don't know just what the trouble is, whether it is the old man with the scythe catching up or if he is trying to economise, but Gordon 4GH has been heard—did I say heard?—on the air lately having omitted to turn on the modulator tap. Never mind Gordon, make out a list, pin it on the wall and tick off the items as you go through. You know, (i) have I switched on the heaters, (ii) the h.t., (iii) the modulator, (iv) aerial to transmit position, etc.

Jimmy 4HZ is busy bedding down his bees for the winter. An idea! Why not pipe a little soft sweet music to each hive, like "The Lullaby of the Bees," to keep them happy and contented over the cold dull winter months? A little later on when the birds appear, again play them "Spring Song" with gusto to urge them to be up and at it. But apart from his bees, Jimmy is giving consideration to planting a few more antennae on his antenna farm, to share all the power when he gets the new rig on the air. He recently paid a visit to Herb 4KM, of Mundubbera. I wonder what they talked about?

The Bundaberg class is making good progress. They even have a "Gentleman of the Cloth" taking his regular dose of ergs. Some of the boys there are still waiting for their call signs, while others have theirs allocated. Bill Sebbens is 4ZWS, Roy Spotswood is 4ZWR and with 4ZWH already operating, the boys will be thinking they are working America with all the "W" call signs.

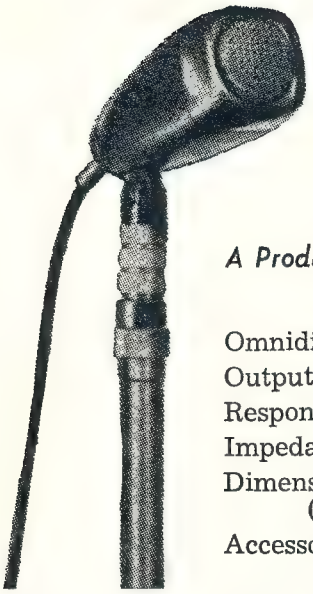
Bought a copy of "Woman's Day," 17th June I think it was, and saw a write up and some pictures on Rusty 4JM and Joslyn 4JJ, telling the world all about their Ham activities.

The Bundaberg Club is negotiating with the City Council for the use of the East Bundaberg water tower (i.e. the rooms under the tower) as their club rooms. If the rig runs hot, it should not be too much trouble to install water cooling, or as has been pointed out, the water tower is not intended to be used as a tank circuit. 73, Fred Cox.

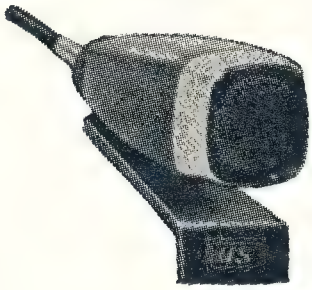
ADJUSTING THE WHIP →

S.w.l. Bill Wines (right), of Warrnambool, is seen making adjustments to the whip aerial on the rear of his car while Stuart VK5MS, of Mount Gambier, looks on. Both members attended the South Western Zone Convention. (Block courtesy of "Warrnambool Standard")

UNIVERSAL SOUND



DYNAMIC MICROPHONE
Model 603



A Product of Italy

Omnidirectional.
Output: —50 db.
Response: 50-12,000 c.p.s.
Impedance: 50,000 ohm, 250 ohm or 60 ohm.
Dimensions overall: 40 x 40 x 98 mm.
(1-9/16" x 1-9/16" x 3-13/16").
Accessories: Table base.

Model 603 is a Dynamic Microphone ideal for music, speech and particularly magnetic recording. Can be used on stand or on a small table base.

Smart square shaped aluminium pressure cast case with stainless steel wire mesh.

Sturdily built and beautifully finished.

Impedance can be easily stepped down from high (50,000 ohm) to low (60 or 250 ohm) impedance.

Retail Price: £14/0/0
Plus Sales Tax £1/9/2

Marketed by **ZEPHYR PRODUCTS PTY. LTD.**

58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA **Phones: 25-1300, 25-4556**

REVISED RANGE!

ELECTRONIC A&R EQUIPMENT

POWER TRANSFORMERS

- *New!!* **VOLTAGE DOUBLER TYPES**
- *New!!* **FULL WAVE RECTIFIER TYPES**
- *New!!* **DATA SHEET AVAILABLE**

send for your copy NOW!

POST THIS COUPON

A & R ELECTRONIC EQUIPMENT Pty. Ltd. 46 LEXTON RD., BOX HILL, VIC.

Please send me your NEW POWER TRANSFORMER Leaflet.

NAME..... ADDRESS..... STATE.....

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for June was held in the clubrooms to a capacity gathering of members and visitors, over 150 in number to be exact, and the original idea was to have held a buy and sell night with Brian 5CA as Master of Ceremonies. I say original idea, because what really did happen was that Brian did his best to carry out the idea, but suffered severe competition from at least five private general meetings in various parts of the room, an opposition selling table at the back of the room, to say nothing of long pauses and interruptions from various sources. I think the night could best be described as one of the best organised disorganisations that VK5 has ever seen or heard, and the only thing I cannot understand is why a couple of table tennis tournaments could not have been held at the back of the room, as well as perhaps a film evening or possibly a display of members' home built gear. Brian battled hard and long with the buy and sell, but to no avail, and the further the night went on, the greater the number of empty seats grew. The wisest thing I feel is to draw a veil over the sad proceedings, and hope that before the next buy and sell night is held, always assuming that it is intended to hold another one, that Council will take stock of the situation and find a suitable remedy.

Bill 5XB is not exactly in the pink at the moment of writing. It appears that he was about to do a strong man act with a 44 gallon drum off of a truck and never woke up it was empty until both he and the drum bit the dust!

Charlie 5ON is another one who has not been too well lately. However, he is a wake-up to the whole situation and will take it easy in the future. You know what they say OM, better to have a few jobs undone than to have no jobs to do. Get the message?

Tom 5AQ heard in QSO with Tom 5TL, "The Voice to you," and believe it or not, on a.m. Tom is one of my mob again, don't know for how long, but I am satisfied with small mercies. He reports that he has a neighbour on the air with the call sign of 5DN, a comparative newcomer to the air.

Had a short contact with Ken 1KM on 7 Mc. the other evening. Sounds like a good bloke to me, even if he does "needle" VK5 in his Youth Radio column. He fought shy of using my nickname, and seemed more at home with Warwick, and all I can say in my defence, Ken, is that a rose by any other name would smell as sweet!

Received several letters, and I am fair dinkum, too, on my companion for the Like-New Mixer which was in the May magazine. What cut me to the quick was the fact that I only made the Hints and Kinks column, but the Like-New Mixer made a full page spread. (Unlike his notes, PanSy did not pad the article.—Ed.) That's influence for you, of course I know why my contribution was played down, I don't play kiss-in-the-ring with F.E., nor do I number Presidents, etc., etc., ad nauseum, etc., etc., among my friends. I might have won the award of the year, too. Hints and Kinks gave it no hope.

News from the South East this month tells of the good attendance of members at the monthly meeting despite the cold weather. Among those present were 5CH, 5GJ, 5MS, 5ZER, 5ZLS, 5ZEV, 5ZFA, 5CJ, John Lehmann, and Trevor and Colin Hutchesson.

John Lehmann has passed his L.A.O.C.P. and is awaiting his call sign, whilst Col Hutchesson is still awaiting the results of his last effort. Congratulations to John and here's hoping to Col.

Stuart 5MS, believe it or not, now has two t.v. sets, the result I believe of a visit to Melbourne recently. Visits to VK3, and Melbourne in particular, have been the downfall of many a good man from VK5, but I never thought he would become a victim. I can only add that perhaps it is only a temporary lapse and all will be well soon, but it only goes to show to what lengths VK3 will go to sabotage the efforts of VK5.

Col 5ZEV is a P.M.G. technician stationed at Millicent and at present living at Rendelsham, about 40 miles from Mount Gambier. He provides a steady signal for the boys on 2 mx. Chris 5ZFA hails from Hatherleigh, about five miles north of Rendelsham, and hopes to be on the air soon. Both of these chaps drive the 40 odd miles to the monthly meetings, which I think you will admit is a mighty effort.

Leo 5GJ has his tower completed and it is a mighty construction. If all is to be believed it throws a shadow at times across Claude's (5CH) house. The worst is to come! On top of the tower is a t.v. aerial! Tut-tut. Claude 5CH is becoming more and more active on the bands and is still very pleased with the results of his antenna coupling device.

Received two somewhat unexpected letters this month, one from my Scotch palsy-walsy, Joe ex-5RC, who is on his way home to G-land. He has had a great trip home so far via VR2-KH6, and the letter was written from W6. He was sorry not to make the general meeting to say goodbye to all the gang, but emphasised again that he had greatly appreciated all the many little acts of kindness shown him during his stay in the premier State of VK5. The picture on the postcard was called the "crookedest street in the world" and I am wondering if this was a final dig at me? Anyway Joe, all the best, and hope to hear from you sometime. I can always use a Scotch espionage agent!

The second letter was somewhat mysterious, the envelope was marked M.V. Wanganella and the pages of the letter were marked Hang Fung Line, and the signature was Max 2ARZ, better known in VK5 as "Renew your licence at the General Post Office Max". His opening remark of "So you nearly lost your licence, see if I care," was typical, although he did go on to say that he would be in ZL for about 7½ weeks and would be mobile on 80 mx and portable on 40 and 20 mx during most of that time. Apparently the letter was intended to create a feeling of envy in my mind, with me trying to keep my nose out of contact with the grindstone, and he living in the lap of luxury in ZL. However, it failed in its purpose, in my well-known modest and shy make-up there is no room for envy, my thoughts are too pure. He closed the letter somewhat cryptically by saying, "My regards to your wife, I think she must have a wonderful nature," and I was foolish enough to show it to her. Her halo, which she has always managed to wear in an upright position, despite my many unsuccessful attempts to scuttle it, is now fixed more firmly than ever and apparently Max, having nearly cost me my Amateur licence, now has designs on my marriage licence. Must have a wonderful nature indeed. Listen Brother, I could tell you a thing or two about her, but I won't, she is looking over my shoulder as I write!

Heard Steve 5ZB portable on 7 Mc. from VK2 the other night and was more than surprised to hear him say that his power was only 3 watts. He was coming in like a local to me and was enjoying himself among the wise men from the East, if all he said could be believed.

Doug 5KK heard on 7 Mc. the other night and was interested in his remarks regarding his sojourn at Darwin recently, plus his experiences whilst on the air as 8KK. He kept in touch with the local boys whilst away and managed to enjoy the scenery as well. He is about to shift QTH, so thought I would give him a call, but no answer to my signal. Some 20 minutes later my telephone rang and he was on the other end to apologise for not coming back. It appears that when he pressed the button to come back everything blew up. I knew I was dynamite, but that was the first practical demonstration of my potential. Potential, get it—potential, get it—all right forget it! I am only trying to earn that extra nought the Editor gives me every year. Talking of Editors, and who would unless they wanted to keep sweet, have you noticed his somewhat caustic references to me lately? Apparently he does not realise my worth, nor do many others for that matter!

Every now and then, mainly at a general meeting of the Division, up comes a member and with a ring in his voice somewhat resembling the ring that would have been heard in the voice of Columbus when he discovered America, says, "What's wrong with the magazine these days? It consists mainly of reprints of overseas articles, and nothing from the Amateurs in VK." Now it always beats me, why don't they take their momentous discovery a little further to its logical conclusion and discover the reason for this. The remedy lies in their own hands, and when it is put up to them, without fail, they all look shocked and somewhat hurt and say, "What me! Me send something in to the magazine, why I haven't the time!" Apparently everybody else has the time, but fail in their duty to these busy people, and should be put up against the wall. Quite frankly, it is no good coming to me and grizzling unless it is a positive grizzle, and strangely enough, those who complain the most have done the least to remedy the situation, although again strangely enough, they always seem to have time to criticise. Get the message?

Met a fellow Amateur today who told me that the reason why he was no longer a member of the W.I.A. was because it was too much trouble for them to send him an account at the beginning of each financial year. I pointed out to him the procedure now in existence, but he quite plainly said if it was too much trouble to send him an account, then it was too much trouble for him to bother about the Division. Well there you are, it takes all types to make a world, and apparently the old method of sending out an account will have to come back, despite the added expense. What do you think?

Very little news from the Port Pirie Amateur Radio Club due to the fact that Bruce 5ZEG and XYL Pam are on a visit to the wilds of VK3. I warned them of the dangers and pitfalls awaiting them if they did so, but nothing I could say seemed to deter them. Pam is probably spending the huge fee of noughts she received from the Editor (a short pause for three cheers for Ye Old Ed.) for her excellent contribution in the June issue of the magazine, "Upper Sideband—XYL Type." Isn't that just like VK3—pay them with one hand and then lure them over to Melbourne and get them to spend it with the other!

The Youth Club Scheme at Port Pirie is improving with every month and the ages of the lads range from eleven years to sixteen to seventeen years, and the younger they are the keener they seem. Incidentally, one of my spies planted in Council tells me that it is the intention of Council to pay a visit this month to the Elizabeth Park Technical School in which electronics is taught as a separate subject. This visit could have some bearing on the extent to which the Youth Radio Club Scheme in VK2 can be applied in VK5.

Noticed in my recently received copy of "Info," the journal of the Elizabeth Amateur Radio Club, a short paragraph to the effect that owing to the continued confusion between the father-son call signs of Tubby 5NO and Jeff 5NQ, the latter has now had his call changed to 5ZP. I also noticed reference to the fact that Ron 5FY had offered the information that he had been able to renew his licence at the Elizabeth Post Office with the comment that "perhaps the journal would like to mention that in passing." Sound of hollow laughter and shouts of "See you in gaol before long." Wait until you get the follow-up letter, Ron!

Jim 5FO was at the meeting and during a chat with him he told me that he had at last succeeded in paying his licence at the local post office. However, his moment of triumph was somewhat dimmed with the follow-up notice that he received threatening him with cancellation of his licence if he did not hurry up and cough up. It would seem that a goodly majority of the locals have received such a communication recently and for some reason or other want to pin the blame on me! If I care—I will bake you a cake with a file in it! Perhaps.

Darcy 5JR was another welcome visitor at the meeting and is looking as young and debonair as ever he did. Tells me that he is keener than ever on our hobby and since he made his come-back, a few months ago, is getting more than his share of QSOs. Nice to see you again OM. Bruce 5ZEG was another to make himself known at the meeting, and for the few minutes I had with him seemed safe and sound from his trip to VK3. Last I saw of him he was in the middle of the v.h.f. gang and seemed to be holding his own. What did you do with the budding authoress Bruce? Leave her pecking at the typewriter?

I notice in the VK3 notes for last June, tucked away in a corner, and with no names, only call signs, the members of the new Council. I recoiled in horror at the call sign of the fifth member, and can only assume that the names were left out because of the effect of the insult on me. As an ex-VK3 chairman, and I repeat that statement, as an ex-VK3 chairman, I am speechless and can only assume that the general membership are in ignorance of the injury they have thrust upon me, probably the most famous of ex-VK3 chairmen in the history of that Division. What's that? I was never a VK3 chairman. Oh indeed, well just check up in the minutes and you will find that in the same year that I was the VK5 chairman I paid a visit to VK3 and attended a Council meeting, and was asked to sit in the chair whilst the old Council retired and the new Council was appointed. I might say that I held the office, if only briefly, with my characteristic modesty and decorum, and it was only the threat of bringing in the local constabturary—konstablarry—constablurrie—well anyway, call in the coppers, that made me vacate the chair. This makes me the only Radio Amateur in VK who has held the joint positions of VK3 and VK5 Divisional chairman. So put that on your bazooka and play it. Bearing all this in mind, is it any wonder that I am cut to the quick with the decision of my old VK3 Division membership in allowing that afore-mentioned fifth member to sneak into the 1963-4 Council. Next to s.s.b., this is the worst blow that I have had since the P.M.G. made me discontinue using loop phone!!

More in sorrow than in anger, and quite prepared for the worst in the future—I sign—73 de VK5PS—PanSy to you.

WESTERN AUSTRALIA

Before I go any further, **don't** forget the R.D. Contest. Tune up that rx, fix that tx, get a little enthusiastic and land in the middle of it. Remember what the day is for, that is, to commemorate the memory of those Hams who paid the supreme sacrifice in world conflict.

I know one bloke who is going to be in the Contest and that's Bill 6DD. Bill is situated at the town of Kalgoorlie. Loud and clear signals from 6KG's site have been heard. Mmm? Well, no, Bill hasn't got two tx's, he works at 6KG and operates 6DD. So as I was saying, loud and clear sigs on 80 have been heard and Bill is expected to do great things during the Contest. Don't suppose you could move 4 or 5 hundred miles east, Bill, for the Contest? You'd still be in W.A. but nice and close, like, to those perishing Eastern Staters.

I believe the Wireless Bird has been busy over recent months and chirpings and burpings have been heard from the QTHs of Wally 6ZAA and Neil 6ZDK who, of recent date, have been presented with a harmonic each. Our best wishes to all and may the better baby wind. Burp! ow! sorry!

Whilst Wireless Birds are not really animals, I believe there was a real fox hunt recently. Yes, the fox was Dennis 6AW and he was holed up in the cliffs of Mosman; real cool, like, man with a little tx of his own, which was putting out a better signal on the Canning side of the river than it was on the Stirling. And do you think this caused some fun! Anyway he was found by Tony 6ZDT and Alyn 6ZDM. Alyn will run the next one shortly and I can't tell you any more about this because if I do and Alyn finds out, he'lil slay me, he will, because he wants to put it in the v.h.f. notes and if you want to know any more, you look there. See!

An interesting lecture was presented on the "Linear Accelerator" at a recent meeting. This had been suggested by Mac 6MM at a Council meeting a little while ago. How those poor little electrons get kicked about is terrible to behold. I wonder if W.A. people appreciate how lucky they are to have such a thing and the work which is being done along these lines. You know, x-rays and deep ray treatment and so on. Mmm? Sorry, I got a bit philosophical there, but it sort of makes you think, don't it.

There's one to make you think. How many apples in a barrel of grapes. No, no, that's not it. Ian 6CL has a new diesel plant, see. Now this is rated at 3.6 kw. **not** 3.6 kva., but kw's (so I've been told). The question is, why is it that the tone of the deisel changes when Ian turns on his tx? I hear you can plug on jugs and kettles, irons and grinders with no effect, and it's only when the rx/tx is over the tx side that this low growling, labouring, puffing, thumping noise issues forth. Very odd. Anyway, good luck Ian, a machine like that must certainly add to the joy of living away from the city. Er! Um! I'm not sure that sounds correct, but all the best.

Repairs to Receivers, Transmitters; Construction and Testing; T.V. Alignment; Low Noise Xtal Conv., any frequency, £18/10/0 plus tax.

ECCLESTON ELECTRONICS

146a Cotham Road, Kew, Vic. WY 3777.

D.C CONVERTER TRANSFORMERS

Miniature toroidal transformers for transistor d.c. to d.c. converters. Fully encapsulated in epoxy resin. Suitable for horizontal or upright mounting. Voltage doubler circuit.

12v. in, 300v. 100 mA. out **£4**
12v. in, 300v. 200 mA. out **£5**
Other voltages up to 350 watts output supplied to order.
400v. Silicon Rectifiers **7/6**
500v. „ „ **9/-**
800v. „ „ **12/6**
7 amp. Power Transistors **28/-**
Above prices subject to sales tax. Carriage free.

ELIZABETH ELECTRONICS

P.O. Box 7, Elizabeth, South Aus.

My spies down Katanning way are not very active at the moment, but the last time heard, Clarrie 6XG was all points East. I.R.E. Convention, etc. Should be back by the time you read this.

Now don't forget! R.D. Contest, 17th and 18th August. Be in it! 73, 6LS.

— . . . —

TASMANIA

There are many very interesting things to report on this month, but perhaps the two most interesting from the point of view of our hobby are the disappearance from 7 megacycles of most of the intruding commercial stations, and the licensing of Amateurs by Red China. I have only heard the stations with the prefix BY on c.w. and talking only amongst themselves, but even this is a great step forward.

Another piece of exciting news is the acceptance into membership of eight new members at the July Divisional meeting, and four of these new members are full members—Hugh 7DS, Brian 7BP, Bob 7IL and Winston 7ZAP. We extend to you all a hearty welcome, and hope you will all take an active part in Divisional affairs, whether it be administrative, band activity, or merely helping with the multitude of jobs to be undertaken.

The two mx boys will soon be hearing a signal from Edgar 7RY who is about ready to fire-up on that band. May I remind members that we have now lost the 288 Mc. band. Furthermore, the 420 to 450 megacycle band is not to come into operation until 1st January, 1964. Plans are afoot, particularly in the Hobart area, to have transmitters and converters ready for that band.

Our Secretary, Charlie 7KS, had a bout of sickness about the end of June, and so did his rig. I understand there was no connection between the two events. The v.h.f. boys have just about finished a 6 mx converter for use by the 7WI broadcast officer for re-transmitting the v.h.f. news each Sunday morning. It is intended that Terry 7CT will be the first user of this gear, so the three officers will then be equipped to do the re-transmission. Congrats to Den 7DK on having the initiative to re-transmit 7WI on 2 mx in the Launceston area, filling in a gap in our services. We are also delighted to learn of the increasing attendances at the Zone meetings, 22 at the June Northern meeting and 20 at the July North-Western meeting.

Remember chaps, the R.D. Contest is in August. We need a good score from you and make sure your logs are also entered well before the due date. We do not mind the QRM, it is a thrill to hear the VK7 stations making such a lot of noise.

Terry 7CT has just terminated, at time of writing, his lectures to the A.O.C.P. class, so they will be sitting for their exams shortly, and we wish them all success. Terry hopes to begin another class next February. The Division is very much beholden to you for your devotion to Amateur Radio, Terry, and publicly thank you for your efforts.

The July meeting took the form of a film evening, with emphasis on space travel and research. The films were well received. The meeting was also delighted to receive a letter from the Director of Civil Defence in Tasmania outlining our part in the future plans of his Department. Your help will be needed. 73, 7ZZ.

NORTH-WEST ZONE

Not a lot of Zone activity to report this month, everyone seems to have been very quiet lately, although it has been whispered that 7DA has been heard on the air! Yours truly has made a few contacts on mobile on 2 mx, mainly with Northern Zone chaps. These boys are keen up there, with several new Z calls now operating. Unfortunately these activities are now denied me due to lack of xtal—and wheels.

Unpredictable conditions seem to exist on all other bands at present, sometimes making the broadcast difficult to receive, even on 80 mx, although according to George 7XL, 40 mx DX with s.s.b. is commonplace.

We were pleased to see several chaps who seldom attend our meetings present last meeting, and to welcome Mr. L. E. Tongs, from Devonport. Athol 7LR arrived complete with a large quantity of goods for auction, this being conducted most capably by Max 7MX. This meeting was most successful, both from a social and financial aspect. It is pleasing to see regular good attendances at meetings, but what we need to look for are ways to make Amateur Radio more interesting and appealing to attract and hold the attention of both new and old members. We need more Radio in our activities, rather than just having a social club, which, excepting July, seems to have been the tendency of late. 73, 7ZBH.

NORTHERN ZONE

I missed out last month on the notes, though nobody's fault but my own, I was too late! I will have to mend my ways.

As far as activity is concerned, this has again been mainly concentrated on v.h.f., the 2 mx band has certainly been very active. There are now 10 active operators working this band and any night can find at least seven of these working. Eric 7ZEC consistently works Hobart from Evandale on sked, much to the envy of others in Launceston, but Bob 7ZRF has been able to hear the Hobart boys the last few nights. Den 7DK has been heard in Poatina, 35 miles away, on his 2 mx mobile, using a quarter wave whip, which shows good promise for mobile activity.

John 7JF has come up with a signal on 144, so now there are two 144 stations at Poatina. Ted 7ZBB successfully passed his c.w. for his full licence, and is waiting on his new call sign, so best of DX to you Ted on the lower bands. Bob 7ZRF has cured his modulator trouble and his signal now sounds terrific, especially with that beam pointed to Poatina. Graham 7ZBR is a consistent worker on 2 mx. He can be heard every night and Graham has his sights on working the VK3 boys as soon as the next break-through occurs.

Very pleasing to see all those mobile signals coming on in VK7. Those I have heard in the north and north-west area are: Den 7DK, Peter 7PF, Col 7LZ, John 7JF, Ken 7KH, George 7XL, Syd 7SF, Max 7MX, and we should see several more on shortly. These mobile stations are all potential operators ready to go in an emergency. Now that the ball is rolling with the commencement of a W.I.C.E.N. organisation in Tasmania, this fact may become even more important.

The monthly meeting of the W.I.A. was a very interesting one, some old faces were seen at the meeting—Ray 7RK, Bill 7MC—and it was very pleasing to have them back. The subject of discussion was the revision and amendment of the Zone rules, and this developed into a quite lively discussion at times—in all, an enjoyable meeting. Reg 7RL was present also as a visitor and as Reg is associated with the local A.B.C. television station, we should see quite a lot more of him.

Den 7DK now has permission to re-broadcast the weekly 7WI session on 2 mx and this should be a help for the v.h.f. boys in the north. Arrangements are already in hand for representatives to contact Jack 7JB on Saturday evenings with news for the Sunday broadcast. Jack will record this news report on tape and replay on the broadcast. 73, Johnny Fox.

HAMADS

Minimum 5/-, for thirty words. Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. **Copy must be received at P.O. Box 36, East Melbourne, C.2, Vic., by 8th of the month,** and **remittance should accompany** the advertisement. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

FOR SALE: Creed 7-B Teleprinters (2), 1 roller feed, 1 sprocket page feed. Excellent condx, suitable for Rtty. £35 each. F.O.B. Brisbane. Contact VK4RQ, 18 Wendell St., Norman Park, Qld. Phone 95-2191.

FOR SALE: 1 Dow-Key Electronic T.R. Switch, 1kw., 1.8-30 Mc., No p.s., £6. 1 Dow-Key above, with in-built p.s. 110v., £12; both as new. 1 SB10, as new, £40 or offer. S. E. Widgery, 39 York St. West, Ballarat, Vic.

STILL available, Matched Sets of Filter Crystals, approx. 5.5 Mc. or 370-440 and 480-530 Kc., 3 Guineas per set of six. Mounted and aligned plug-in Filter Units, 5.5 Mc., 6 Guineas. Spot freq. Crystals, ±0.01%, 4 to 6.5 Mc., 15/- per crystal. A. Bles, VK2AVA, 33 Plateau Road, Springwood, N.S.W.

WARBURTON FRANKI

RADIO and T.V. ACCESSORIES

New Imported Lines–just arrived

ORDER WHILE STOCKS LAST

HEADPHONES

High Impedance. Attractive White Earpieces—Type T20.

14/3 pair + S.T. 25% + Pack and Post 8d.

TRANSISTORISED MICROPHONE MIXER

Enables four microphones to be used from one input. Separate volume controls for each channel. Attractive metal box, 6" x 2¾" x 2¼". Connections by standard Phone Plug. 9 volt battery supplied.

72/- each + S.T. 12½% + Pack and Post 2/6.

CIRCULAR METAL SPEAKER HOUSING COMPLETE WITH SPEAKER

9⅞" overall diameter, 2½" overall depth. Frequency range: 90 to 9,000 c.p.s. Voice Coil Impedance: 16 ohms. **Dust Cover supplied.** Ideal for cars, ceiling installations, outdoors, etc.

65/- each + S.T. 25% + Pack and Post 2/9.

ELECTRIC MEGAPHONES

FAMOUS T.O.A. BRAND—TYPE EM407

Voice range, 500 feet. Batteries: four 935s. Gives five to six hours use. Size: 6" diameter x 10⅝" long. Weight: 1.8 lbs.

£7-16-0 + S.T. 12½% + Pack and Post 2/6.
(Batteries 3/6 extra)

AMPLIFIERS STEREO MODEL YA-130A

Housed in attractive metal cabinet. Output power, 7 watts per channel. Frequency response: ±1 db. 40 to 20,000 c.p.s. Harmonic distortion: Less than 1%. Hum and noise: —58 db. below rated output. Input for full output: 300 mV. Output Impedance: 4, 8 and 16 ohms.

Controls: (1) Phone, Tuner, Auxiliary.
(2) Stereo, Mono.
(3) Speaker Reverse.
(4) Tone.

Valves: 1 12AX7, 2 6BQ5, 1 6CA4. Size: 9¼" x 4½" x 7". Weight: 9 lbs.

£15 + Sales Tax 25%
+ Freight 7/6 (Vic.). 10/- other States.

TRANSISTOR TAPE RECORDERS

Famous UNICORN brand. Few only to clear. Supplied complete with microphone, earpiece and battery.

£12 + Sales Tax 12½%
+ Pack and Post 2/6.

RESISTORS

English make, 10% tolerance. Most preferred values available.

1 watt, **37/6 per 100** + S.T. 25%
½ watt, **30/- per 100** + S.T. 25%
+ Pack and Post 6d.

IMPORTED TWO-WAY INTERCOMMUNICATION SETS –TRANSISTORISED

Supplied complete with master station, remote station, connecting wire and battery.

80/- each + Sales Tax 12½%
+ Pack and Post 1/6.

SILICON DIODES

400 P.I.V. at 1 ampere. Type STV-4.

6/3 each + Sales Tax 25%
+ Pack and Post 5d.

PICK-UPS

Attractive arm fitted with Australian-made turnover crystal cartridge complete with L.P. and Standard sapphire stylii.

25/6 each + Sales Tax 25%
+ Pack and Post 6d.

Also above arms available less the cartridge.

10/- each + Sales Tax 25%
+ Pack and Post 6d.

AUTOMATIC CAR AERIALS

ELECTRIC "NO-TOUCH" TYPE

Top cowl mounting—for connection to Car Radio on-off switch. Turn radio on and the aerial rises; turn radio off and the aerial sinks out of sight. 12 volt operation only.

£12-12-8 + Sales Tax 25%
+ Pack and Post 4/2.

CRYSTAL TURNOVER CARTRIDGES

Complete with L.P. and Standard sapphire stylii.

18/- each + Sales Tax 25%
+ Pack and Post 5d.

TRANSISTOR A.M. TUNER

Works off 216 Eveready 9 volt Battery (not supplied). Contains 3 transistors, 1 diode, numbered tuning knob, ferrite aerial, etc. Size: 4" x 2¾" x 1¾". Use with amplifiers, tape recorders, etc.

112/- each + Sales Tax 25%
+ Pack and Post 9d.

POWER TRANSFORMERS

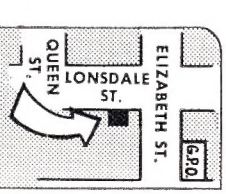
A & R BRAND

Stocks going down fast, so order immediately to avoid disappointment.

Type 1955: 40 mA., 285v. a side.
Type 1917: 50 mA., 280v. a side, 6.3v. at 0.6a., 16v. at 0.45a.
Type 1916: 70 mA., 325v. a side, 6.3v. at 2.25a.

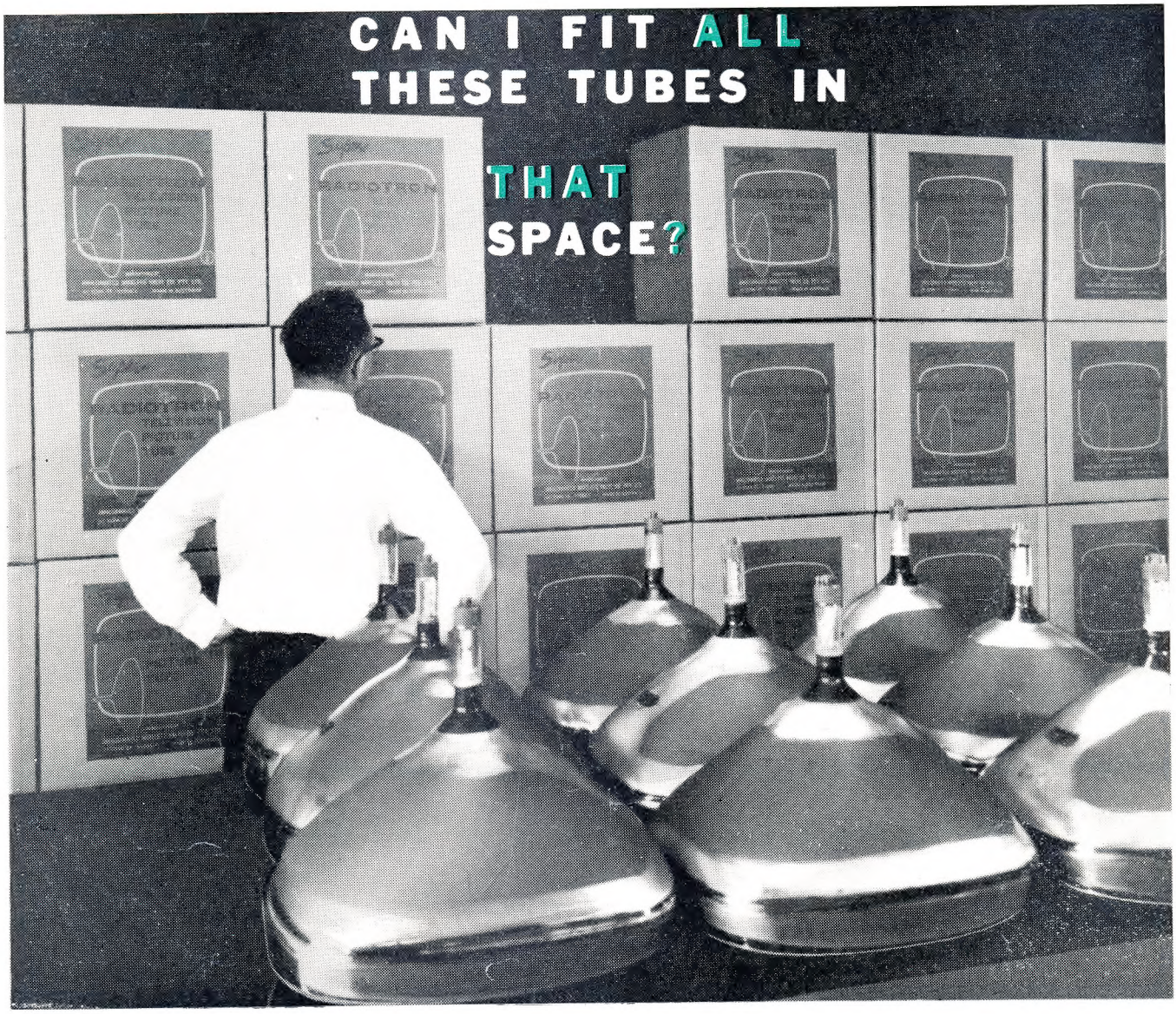
15/- each
+ S.T. 25% + Pack and Post 2/6 ea.

WARBURTON FRANKI
359 LONSDALE ST., MELBOURNE — MU 8351



- TRADE ALSO SUPPLIED
- OPEN SAT. MORNING

Please include postage or freight with all orders.



YES!

BY USING THE A.W.V. 21CBP4A WHICH REPLACES 9 POPULAR TYPES

Each time you buy a Super Radiotron 21CBP4A you are buying the equivalent of 9 replacements—not just one! The same applies to the 17CGP4 which replaces a further 9 tubes and the 23MP4A which replaces 4 types . . . over 22 tubes replaced by 3.

This means that by stocking the Super Radiotron range of picture tubes you can keep a complete replacement stock in less space, with less overhead, than before. It also means greater customer satisfaction by eliminating lengthy delays caused by not having space for certain tube types.

AWV

AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD.

SYDNEY • MELBOURNE • BRISBANE • ADELAIDE